

# ESTIMATES COMMITTEE

## 1957-58

**TWENTY-FIFTH REPORT**  
**(SECOND LOK SABHA)**  
**MINISTRY OF DEFENCE**  
**MILITARY ENGINEER SERVICES**



सत्यमेव जयते

**LOK SABHA SECRETARIAT**  
**NEW DELHI**  
*April, 1958*

## CORRIGENDA

### Twenty-Fifth Report of the Estimates Committee on the Ministry of Defence-Military Engineer Services.

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Page 9, line 2 from below, *for* 'outstanding' *read* 'outstandings'

Page 13, line 8 *for* recommed *read* 'recommend'

Page 14, para 36, line 10 *for* 'G.A.O.' *read* 'C.A.O.'

Page 14, para 36, line 11 *for* Officers' *read* 'Officer'

Page 16, para 39, line 2 *for* 'S.E.' *read* 'C.E.'

Page 22, para 52, line 11 *for* S.W.Es *read* 'C.W.Es'

Page 23, line 2 from below *for* formation *read* 'formations'

Page 31, line 5 *for* at *read* as

Page 36, para 94, line 5 *for* enable *read* 'enabled'

Page 39, para 101, line 5 *for* constructors' *read* 'con  
tractors'

Page 41, lines 2, *for* exacutive *read* 'executive'

line 4 and 5 *for* 'confidefence' *read* 'confidence'

line 5 *for* 'abritarily' *read* 'arbitrarily'

para 107, line 8 *for* 'engineers' *read* 'engineer'

Page 42, para 110, line 2 *for* lakhs *read* 'lakh'

line 8 *for* lakhs *read* 'lakh'

last line *for* 'office' *read* 'offices'

P.T.O.

Page 47, para 128, line 6 *after 'l' insert 'month'*

line 12: *for 'abserve' read 'observe'*

Page 49, para 128, line 2 *for 'standarised' read 'standardised'*

line 18 *for 'respects' read 'respect' and  
for 'State' read 'States'*

Page 50, line 11 *for 'standarisation' read 'standardisation'*

Page 57, para 148, line 4: *for 'examination' read 'examination'*

Page 59, para 152, line 13 from below *for 'adopted' read  
'adapted'*

Page 63, para 160 line 4 *for 'resire' read 'desire'*

line 6 *for 'Service' read 'Services'*

Page 66, para 166 line 4 from below *for 'enagaged' read  
'engaged'*

Page 66 para 168 line 2 from below *for 'cwoold' read 'could'*

Page 70, para 2, line 4 *for 'sitting' read 'siting'*

Page 70 para 6, line 2 *for 'advised' read 'advices'*

Page 71, para 12, line 1 *for 'technical san' read 'technical  
sanction to'*

Page 73, para 3, item (f), line 2 *for 'furntiture' read 'furniture'*

Page 76, col. 1, line 2 *after 'Pay' insert 'and'*

Page 80 81, heading *for 'To the Sum' read 'in the M E S.'*

Page 90 S. No. 34, Col. 9 *for '2.10' read '12 10'*

Page 106 line 6 from below *after 'D'man' insert 'or D'man'*

Page 112, Col. 4, item 14, line 1 *for 'Sitting' read 'Siting'*

Page 113, Col. 4, line 1: *for 'Sitting' read 'Siting'*

Page 113, Col. 5, item 21, line 1: *after 'Alletment' insert 'of'*

Page 115, S. No 3, Col. 6 *for '15.5.55' read '15.4.55'*

Page 116, S. No. 7, Col. 4: *for '10.43' read '100.43'*

Page 116, S. No. 10, Col. 4 *for '6 45' read '6.46'*

Page 124, line 2 *for 2821' read '1821'*

Page 124, para (iv), line 1 *for '1815 Re' read '1815'*

Page 124, line 13 from below *for 'mere' read 'more'*

Page 126, para 6, line 4 *for 'of' read 'or'*

Page 127, S. No. 4, lines 7 and 8 *for 'infructions' read 'infructuous'*

Page 135 line 2 from below *for 'manpowers' read 'manpower'*

Page 138, line 5 *for 'abais' read 'basis'*

Page 139, line 2 from below: *for 'office' read 'offices'*

Page 139, last line *for 'association' read 'associations'*

Page 143, S. No. 70, Col. 3, line 4 from below: *for 'spread' read 'speed'*

Page 144, S. No. 73, line 7: *for 'Institue' read 'Institute'*

Page 144, S. No. 73, line 8: *for 'Engineers' read 'Engineers'*

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## MEMBERS OF THE ESTIMATES COMMITTEE, 1957-58.

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3. Shri Jogendra Singh
4. Shri Mahavir Tyagi
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29. Shri B. K. Gaikwad
30. Shri Shraddhakar Supakar.

### SECRETARIAT

Shri S. L. Shakhder	—	<i>Joint Secretary</i>
Shri A. R. Shirali	—	<i>Deputy Secretary.</i>
Shri C. S. Swaminathan	—	<i>Under Secretary.</i>

Ceased to be a member on his appointment as Deputy Minister with effect from 2-1-58.



## INTRODUCTION

I, the Chairman, Estimates Committee, having been authorised by the Committee to submit the Report on their behalf, present this Twenty-fifth Report on the Ministry of Defence on the subject 'Military Engineer Services'.

2. The Committee wish to express their thanks to the Secretary and other officers of the Ministry of Defence and Army Headquarters (E-in-C's Branch) for placing before them the material and information that they wanted in connection with their examination of the Estimates. They also wish to express their thanks to the representatives of the Builder's Association of India, Central Builders' Association, M/s Uttam Singh Dugal & Co. (Private) Ltd., and M.E.S. Civilian Officers' Association and to Shri G. D. Bhagyam (Retired Chief Surveyor of Works) for giving their evidence and making valuable suggestions to the Committee.

NEW DELHI;  
*The 23rd April, 1958.*

BALVANTRAY G. MEHTA,  
*Chairman,  
Estimates Committee.*

## ORGANISATION AND ADMINISTRATION

### (a) Historical Background\*

The Engineer Services in this country, both civil and military, began as a military service. In the eighteenth and nineteenth centuries, when the East India Company was extending and consolidating its rule over the country, the engineering requirements of the army were more predominant than those of other departments. As conditions became more stable, a Public Works Department was created under the control of a "Military Board", manned by the Indian Corps of Engineers, which was entirely military in character. As civil works gradually assumed greater importance, Civil Engineers came to be employed in increasing numbers and Provincial Governments began to be dissatisfied with the military control over works executed on their behalf. In 1851, the Public Works Department was brought under Civil control, but was in charge of execution of both Military and Civil works. After 1860, the Public Works Department expanded greatly and large numbers of Civil Engineers were engaged. In course of time the Military Department found that they suffered from the loss of control over military works. In 1871, the control of large military works as well as all military works in the Cantonment areas in Bengal were placed in charge of a Military Works Branch of the Public Works Department under an Inspector General of Military Works. But it was not until 1881 that the control of the Military Works Branch of the Department became vested in the Military Department and it was not till 1889 that this Department took over all military works. In 1899 the Military Works Department became entirely military in character. The department was then designated the Military Works Services and its head the Director General of Military Works. After the first World War, a scheme was brought into force on the recommendations of the 'Army-in-India Committee', 1919-20 whereby the Director General of Military Works became a Director of Works subordinate to the Q.M.G. and there was a separate Inspector of Sappers and Miners and Pioneers under the Chief of the General Staff. The system was later abandoned since the Royal engineers did not like their new designation as works officers and regarded the position assigned to the engineering Services as one of inferiority. It was also contended that this system entailed absence of solidarity and unified control, which were liable to impair seriously the efficiency of the engineering organisation. From December, 1923, the Military Engineer Services were, therefore, organised under an Engineer-in-Chief who was borne on the establishment of the Army

\*Army in India and its evolution - An official compilation of the Government of India, 1924.

Headquarters and was directly responsible to the Commander-in-Chief. This system of engineering organisation and administration continues upto the present day.

### **(b) Organisation**

2. The Engineer Organisation consists of two parts: (a) Headquarters Organisation (Engineer-in-Chief's Branch at Army Headquarters), (b) Organisation on the ground (Chief Engineers down to Garrison Engineers).

3. The Headquarters Organisation is again split up into two portions—'G' and M.E.S. The 'G' staff which deals with the Engineer troops, is sanctioned by the Army Standing Establishments Committee and is in accordance with the standards applied to other branches of A.H.Q. It is related to the size of the army and not to the works load.

4. The M.E.S. at the Headquarters are controlled by the Engineer-in-Chief who is the head of the Corps of Engineers also. It is divided into three Commands (Southern, Eastern and Western) and is controlled by Chief Engineers (usually of the rank of a Brigadier) at each Command who are also advisers to the G.O.C.-in-Chief of the Command on all Engineer matters. Each Chief Engineer has a certain number of Commanders Works Engineers (C.W.E.) in charge of Areas and each C.W.E. a certain number of Garrison Engineers (G.E.) in charge of Divisions, who in turn have Assistant Garrison Engineers or Superintendents Grade I in charge of Sub-Divisions. In addition to the three Chief Engineers, there is one Chief Works Officer in charge of the Naval Dockyard Expansion Scheme, Bombay and Naval projects in Bombay Area, with the necessary subordinate formations. Further, there are certain Commanders Works Engineers and Garrison Engineers allotted exclusively for Air Force Works. The Director General of Ordnance Factories has also got an Engineer Officer at his Headquarters to advise him on engineer matters.

5. The duties and responsibilities of the Engineer-in-Chief, the Chief Engineer, the Commander Works Engineers and the Garrison Engineer are given at Appendix I.

### **(c) Functions**

6. The Engineer Arm of the Armed Forces has a two-fold organisation: (i) Engineer troops (*i.e.* Corps of Engineers) and (ii) Military Engineer Services.

7. The Engineer Troops are an integral part of any force operating in the field. They provide engineer support to the Defence Services. Their object is "to apply engineering skill and resources to the furtherance of the Commander's Plan". They are a specialised arm and are employed independently or in support of other arms to accomplish such tasks as require engineering skill. During war

they operate in the forward areas, lines of communication and base areas. Their tasks include laying and demolition of mines, building of temporary roads and bridges, water and electric supply, railways and inland water transport, repair workshops, etc. Units of the Engineer Corps carry out, in the operational and lines of communication areas works services such as permanent field defences and fortifications, electrical and water supply, construction and maintenance of roads, bridges and airfields, camps, hospitals, etc.

8. In peace areas, such tasks are carried out by the Military Engineer Services. All the works for the Army, Navy and Air Force including construction and maintenance of buildings, roads, airfields, harbours, furniture, electric and water supply installations, sewage disposal works and refrigeration are looked after by the M.E.S. They are also responsible for all new construction works required for the Ordnance Factories. They carry out the works mostly through the agency of civilian contractors and at times departmentally by civilian tradesmen. Details of their functions are given at Appendix II.

#### (d) M.E.S. Review Committee

9. In September, 1955, the Government of India set up a Committee for reviewing the work of the M.E.S. Organisation. The terms of reference of the Committee were:

- (i) To examine the procedure for the execution of works, the system of selection of contractors, the scope for carrying out departmental works, the procedure for obtaining materials, the adequacy of checks exercised on prices and standard of work and generally to review the entire works procedure with a view to discovering any defects which may be responsible for waste, inefficiency and delay in the execution of works and to suggest remedies.
- (ii) To examine whether administrative, financial and technical powers are adequately delegated at all levels to ensure speed and efficiency.
- (iii) To examine whether any avoidable delay occurs in obtaining sanctions for works and whether the procedure for obtaining sanctions can be simplified.
- (iv) To make an estimate of the capacity of the existing staff to undertake works and make suggestions as to how the capacity may be increased.
- (v) To examine the organisation and the system of recruitment in the M.E.S. with reference to its requirements and available manpower.

10. The M.E.S. Review Committee submitted its report to Government in February, 1957. That report is still under consideration

† the Government. The Committee learn that out of 101 recommendations of the Committee, 75 have been finalised and the remaining 26 are under various stages of consideration. *The Committee have called for a statement showing the action taken by Government on the recommendations of the M.E.S. Review Committee.*

11. They would in this connection stress the need to come to early conclusions on the recommendations of Committees set up to examine specific matters. While the importance of giving careful thought to the recommendations of far-reaching consequences made by such Committees cannot be minimised, *the Committee recommend that a time limit should be set for coming to definite conclusions on matters over which a Committee have deliberated and put in much time and labour. Further, they would suggest that in order to expedite decisions on important issues the system of discussions between the concerned authorities should be adopted to an increasing extent.*

12. In this connection the Committee would like to mention that though the M.E.S. Review Committee was originally asked to submit its recommendations within six months i.e. by the middle of March, 1956, actually they presented their Report to Government on the 4th February, 1957. The delay was attributed, *inter alia*, to the preoccupation of the members of the Review Committee who were all officials (excepting the Chairman, who was a Deputy Minister) with their normal duties in addition to their work on that Committee. Since a thorough examination of such an active Organisation like the M.E.S. which has not been examined by any Committee before, would require quite a great deal of attention on the part of at least some of the members, *the Committee would suggest that while selecting the personnel for such committees it should be ensured that at least some of them are not over-burdened with other responsibilities, so that they will be able to finalise their work within a reasonable time.*

## II

### BUDGET AND ACCOUNTS

#### (a) Over-Budgeting

13. A statement showing the original budget provision and actual expenditure by the M.E.S. during the last five years (1952-53 to 1956-57) in respect of Army, Navy, Air Force and Factories under the various Heads, is given at Appendix III. It will be noticed that the expenditure has been considerably less than the Budget provision under all the Heads during these years. Particularly in respect of Capital Projects it is observed that the estimates exceeded the actual expenditure during these years by 48%, 47%, 33%, 35% and 21% respectively.

14. *The Committee view with concern such recurring over-budgeting which is contrary to sound finance.* It not only leads to the raising of additional resources which are scarce, and thereby strains the economy but also prevents their use for urgent progress of developmental activities. In the case of Works Services estimates, such liberal provisioning may also lead to uneconomic use of resources of labour and material. Over-estimating also leads to extravagance in staff establishments, since they are sanctioned on the basis of budget provisions.

15. It was explained that the lapses or surrenders were mainly caused by—(i) delays due to changes in plans and designs on account of users' requirements, (ii) delays in receipt of stores, (iii) delays on the part of contractors in executing the work in time (iv) delays in payment of final bills, (v) over-estimating in the cost of certain projects, (vi) inclusion of projects administratively approved late in the previous financial year and (vii) delay in acquisition of land. The Committee were told that measures were being taken to meet these factors by tightening up measures regarding payment of bills, expediting issue of Administrative Approval, planning in advance and over a period of time and initiating action for acquisition of land before the issue of administrative approval. The position was stated to be improving.

16. *The Committee feel that the reasons given by the Ministry for the lapse or surrender of funds are avoidable and clearly show a lack of proper planning and an inadequate appreciation of the various preliminaries to the execution of works on the part of concerned authorities.* It appears that the Services in their anxiety to get works done, ask for funds for projects which have not been ade-

quately planned or which cannot be completed due to various reasons. In this connection, the Committee learn that about a score of projects which were included in the budget estimates during the last five years were not taken up subsequently due to various reasons. In 1955-56, five projects costing over Rs. 8 lakhs were included in the Budget estimates and were also commenced but were abandoned subsequently due to change of policy. *The Committee have no doubt that with sufficient care and foresight, the infructuous expenditure and labour on these projects could have been avoided. They would refer in this connection to para 12 of their Ninth Report (First Lok Sabha) in which they have stressed the necessity of proper planning of all aspects of a scheme before its inclusion in the Budget estimates so as to avoid lapse of funds.*

### (b) Rush of Expenditure

17. From the statement (Appendix IV), showing the progress of monthly expenditure incurred on Works and Maintenance etc., by the M.E.S. during the last five years, it is noticed that the expenditure incurred in the last three months of a year forms a large proportion of the total yearly expenditure. The representatives of the Ministry of Defence and the Engineer-in-Chief attributed part of this rush to the existing financial year which commenced from 1st April. It was said that works were held up during the monsoon period and could be started only from October or November. On the other hand the Joint Financial Adviser felt that the commencement of the financial year had little to do with the rush of expenditure. According to him the real reason was in the attempt to pass all the bills towards the close of the year, especially in March, to avoid lapse of funds.

18. *The Committee also notice that it is not only in the case of construction works, but even under other heads there is a rush of expenditure towards the close of the financial year. Under the sub-head 'Maintenance of buildings, roads, furniture etc.' the expenditure during the last 3 months of the year is 50 per cent. of the total expenditure of the entire year. Also, the expenditure during March only is about 30 per cent. of the total annual expenditure. It is also seen that under this head the monthly expenditure generally shows a steady rising trend in the last 9 months of the year with a sudden spurt in the last 3 months. The figures do not indicate that a high tempo of work which is otherwise kept up drops during the monsoon period and is revived again in full when the monsoon is over. This, therefore, leads one to believe that apart from other reasons like interruptions by monsoon there is a tendency to relax the pace of activity during the first 8 or 9 months of the year and to accelerate it only during the last 3 months.*

19. This is also evident from the fact that even under such sub-heads as 'Maintenance and Operation of Installations', 'Tools, plant and machinery' and 'Miscellaneous expenses', the expenditure

incurred in the last 3 months is a very high proportion of the total expenditure of the year, as may be seen from the following statement:

(Figures in lakhs of Rupees).

Head of Account		Expendi- ture during the last three months	Total Expendi- ture	Percen- tage of Col. 2 to Col. 3
Maintenance and Opera- tion of Installations .	1952-53	79·20	186·47	43%
	1953-54	76·68	200·71	38%
	1954-55	84·88	201·60	42%
	1955-56	94·11	215·55	44%
	1956-57	82·63	199·82	41%
Tools, Plant and Machine- ry (Net) . . . . .	1952-53	54·09	83·69	65%
	1953-54	42·18	84·43	50%
	1954-55	43·59	94·56	46%
	1955-56	21·21	57·30	37%
	1956-57	35·26	67·76	52%
Miscellaneous Expenses .	1952-53	14·55	21·25	69%
	1953-54	13·63	21·34	64%
	1954-55	8·02	17·29	46%
	1955-56	9·12	17·42	52%
	1956-57	11·99	20·26	59%

20. The Committee are concerned at this persistent rush of expenditure during the last months of every year as it is bound to create the impression that public money is being expended hastily and in an ill-considered manner. Although the Committee were told by the Controller General of Defence Accounts that no checks (audit and technical) were overlooked during the rush period, they fail to understand how the normal complement of staff sanctioned for this purpose could effectively apply all the requisite checks over about 1/3rd of the total yearly expenditure in one month only unless either the scrutiny exercised is perfunctory or the staff strength is liberal and is under-worked during the other months of the year.

In this connection the Committee were also informed that in the case of major works there was a provision in the contracts for making 'on account payments' to the contractors on the basis of quantity of stores brought to the site and on the valuation of the works completed. Further there was a working rule about the extent to which



the Engineer-in-Chief could commit Government during the first quarter of a year in respect of works in progress. It was also stated that the budget provision for minor works and maintenance works did not vary substantially from year to year. *In view of this, the Committee feel that the rush of expenditure during the last quarter of the year is not inevitable. They do not approve of the present practice of proceeding in a leisurely fashion in the first nine months of the year and then making frantic attempts to see that the bills of contractors are passed by the end of March.*

*The Committee have no doubt that the position could improve considerably if attempts were made at all levels to avoid rush of expenditure towards the close of the year by arranging for a large amount of bill payments from the beginning of the year. To facilitate the spreading of expenditure evenly throughout the year, they would suggest that the quarterly allotments of expenditure proposed for the year should be planned by the G.Es. immediately on receipt of the yearly allotments. This may be done in consultation with their Cs.W.E. The progress of actual expenditure against the planned expenditure should be closely watched from month to month by means of a chart with a view to detect the divergence. A periodical review of the progress of actual expenditure against proposed expenditure should also be made by the C.Es who should arrange meetings, if necessary, with their Cs. W.E. and G.Es. for removing any, bottlenecks in the progress of planned expenditure.*

### (c) Outstanding Rent Recoveries

21. The Committee were informed that a sum of Rs. 316.29 lakhs was outstanding on the 1st April, 1957 on account of rent recovery for more than a year. Of this, a sum of about Rs. 116 lakhs is outstanding for over 4 years, 39 lakhs between three to four years, 62 lakhs between two to three years and 99 lakhs between one to two years. The details of these outstandings are given below:—

(In lakhs of rupees)

Rent due from	Amount outstanding for period				Total
	Between 1 to 2 years	Between 2 to 3 years	Between 3 to 4 years	Over 4 years	
Central and State Govern- ments	91.89	58.92	35.63	105.53	291.97
Unit contractors, Clubs, etc.	3.48	1.51	2.71	6.90	14.60
Other private persons.	3.35	2.02	0.56	3.79	9.72
<b>TOTAL</b>	<b>98.72</b>	<b>62.45</b>	<b>38.90</b>	<b>116.22</b>	<b>316.29</b>

22. It will be seen that while an amount of Rs. 292 lakhs approximately is due from Central and State Governments, a sum of over Rs. 24 lakhs is also recoverable from the Unit contractors, clubs and other private parties etc. It was stated that most of the recoveries were due from the Rehabilitation Ministry and the Rehabilitation departments of the State Governments and that the delay in recovery was due to the non-observance of certain formalities at the time of the taking over of these buildings by them due to the then prevailing unsettled conditions as well as non-settlement of terms and conditions. Further, there was the question of accommodation occupied by unsponsored refugees for which the responsibility of the respective Governments (Central and State) has not been fixed so far. It was, however, stated that efforts were being made to improve the position and that a special officer had been appointed by the Ministry of Rehabilitation to help arrive at an agreed settlement about the outstandings against that Ministry and that dues from other Central Government Departments were being written down by relaxing the rules. In regard to unsponsored refugees, the matter was stated to require high level decision.

23. *The Committee are not happy over the delay in the matter since they feel that with the passage of time and further accumulation of dues, settlement would become more difficult. Also since these issues will have to be settled some time, there is no reason why it should not be done early. They would, therefore, suggest that the various issues involved should be settled with the parties concerned without any further delay, by arranging discussion at the highest level.*

24. In regard to the outstandings against third parties viz, Units, Messes, Unit Contractors, etc., the Committee were informed that the Q.M.G. had been asked to take necessary action to improve the position. *The Committee fail to understand how such heavy outstandings were allowed to accumulate against third parties which could have the use of public buildings only after necessary permission and under agreed conditions. They have no doubt that this has mainly been due to laxity in enforcing the conditions and recovery of rents as and when it fell due. The Committee cannot over-emphasise the importance of prompt realisation of public dues. They recommend that effective measures should be instituted to recover the outstanding and that the officers concerned should be made to realise their responsibility in this matter.*

### III ESTABLISHMENT

#### (a) Establishment

25. The establishment of the M.E.S., is generally based on the anticipated engineering load and generally on previous years' figures making due allowances for known variations. Officer establishments are reviewed annually in consultation with the Ministries of Finance and Defence and Government sanction obtained for incremental requirements over and above the basic establishments sanctioned in 1948. Subordinate staff are sanctioned by M.E.S., Officers under their powers in terms of M.E.S. Regulations. The establishment consists of Officers, Military and Civilian and Staff which is mostly civilian. The number of military personnel posted to the M.E.S, is flexible depending on the availability.

26. The strength of the civilian staff of the M.E.S., on the 1st July, 1957 was as follows:

Officers	636
Class III personnel	9,407
Class IV personnel	4,607
Industrial personnel	21,583
<b>TOTAL</b>	<b>36,233</b>

27. The expenditure on pay and allowances of Military and Civilian personnel in the M.E.S. is given below:

(Figures in lakhs of Rs.)

	1952-53	1953-54	1954-55	1955-56	1956-57 (March Supply)
<b>Military</b>					
Officers . . .	6.13	7.16	11.14	14.37	14.57
Other Ranks . . .	..	..	.81	1.81	6.05
					(including adjustment for previous years).
<b>TOTAL (Military)</b>	<b>6.13</b>	<b>7.16</b>	<b>11.95</b>	<b>16.18</b>	<b>20.62</b>

1952-53 1953-54 1954-55 1955-56 1956-57  
(March Supply)

**Civilians**

Officers	41·76	43·52	46·14	48·05	51·53
Others	177·45	187·96	193·92	200·28	212·16
<b>TOTAL (Civilians)</b>	<b>219·21</b>	<b>231·48</b>	<b>240·06</b>	<b>248·33</b>	<b>263·69</b>

The figures of expenditure on staff in the M.E.S., to the total workload during the five years from 1951-52 to 1955-56 are given below:

(In crores of Rupees)

Year	Work load	*Expenditure on Establishment	Percentage
1951-52	18·57	2	10·76%
1952-53	19·57	2·1	10·73%
1953-54	19·40	2·25	11·59%
1954-55	19·94	2·41	12·09%
1955-56	19·49	2·54	13·03%

\*NOTE: Excludes estimated expenditure on portions of the establishment not engaged in execution of works.

28. It is seen that the percentage of establishment charges to the work load of the M.E.S., has been steadily increasing during these years. As may be seen from the following data about the establishment charges of the C.P.W.D., and the Railways the percentage in the M.E.S., is very high.

**C.P.W.D.**

(Figures in crores of Rupees).

Year	Expenditure on Works			Expenditure on Establishment	Percentage of Establishment Charges
	Construction	Maintenance	Total		
1954-55	13·63	4·82	18·45	1·67	8·96%
1955-56	16·08	5·19	21·27	1·92	9·01%
1956-57	19·50	5·50	25·00	2·38	9·50%

## Railways (Civil Engineering Department)

Year	Total Work load	Total estab- lish- ment charges	Perce- tage of estab- lish- ment charges.
1953-54	45·41	3·14	7%
1954-55	56·48	3·28	6%
1955-56	79·99	4·08	5%

The Committee also learn that the percentage of establishment expenditure to works expenditure is much less in the P.W.Ds. of some State Governments, figures being—U.P. about 6 per cent., Punjab about 7 per cent., West Bengal about 9 per cent.

29. In addition to the usual establishment charges, expenses are also incurred on account of workcharged establishment upto a maximum of 2% of the cost of the capital works and those are charged to the cost of the works and not to the cost of the establishment under certain rules prescribed therefor. The Committee would point out that the cost of work-charged establishment is also in fact an establishment expenditure and if the same is also taken into account, the total establishment charges will be still higher. *They feel that in order to help an appraisal of the exact extent of establishment charges in relation to the workload, indications should be given in the Appropriation Accounts about the actual incidence of the charges incurred for workcharged establishment also.*

30. The Committee were informed that the percentage of establishment charges in the M. E. S. was high because the establishments were usually sanctioned on the basis of anticipated workload, which did not generally materialise and there were large surrenders. For instance, in 1955-56, there was a surrender of Rs. 2·6 crores. Another reason was that under para 129 of the M. E. S. Regulations, non-gazetted staff of C. Es., Cs. W. E., G. Es. and S. D. Os. could be sanctioned by the authorities under their own powers. The M. E. S. Review Committee in the course of its investigations found that there was scope for reduction of the establishment sanctioned by the lower authorities and recommended that a pattern of establishment should be laid down for each type of office in the M.E.S. The Committee learn that if the lower authorities who have powers to create establishment conformed to that pattern then the cost of the establishment can be reduced to the minimum. They also understand that the control over the workload in each Division is exercised by the E-in-C. through the scrutiny of progress reports received from the Garrison Engineers and the Chief Engineers. The Committee were further informed that the percentages of establishment charges compared favourably with the C.P.W.D. since the latter had far less maintenance work and had its works concentrated in a few stations.

31. The Committee have separately dealt with the factor of capacity which is forced to remain partially utilised thereby contributing to the high establishment charges. *They feel, however, that while allowance should be made for the uncertainties implied in planning and forecast of funds, it is not necessary that staff sanctioned on the basis of anticipated workload should be kept in position even when the anticipated workload is not expected to materialise. The Committee recommend therefore that a systematic and scientific assessment of the staff position with reference to their achievements and future programme should be carried out periodically, and efforts be made to achieve the maximum economies that could be effected in all directions even to the extent of suitably reorganising the structure of the organisation.*

32. The Committee feel that for achieving economies it is not enough to depend upon the overall control exercised by the E-in-C through the scrutiny of progress reports received from the Garrison Engineers. The Division being the executive unit of the whole organisation, an intensive examination of the workload and the staff available in each Division should be carried out continuously by the G. E. and the C. W. E., with a view to ascertaining the surplus or deficiency in staff, so that the surplus staff can be utilised elsewhere and the deficiency can be made good in time. *The Committee suggest that for this purpose, a system should be devised whereby the Garrison Engineers should be required to correlate their expenditure on establishment to the expenditure on the execution of works and maintenance. The Garrison Engineers may be encouraged to give an objective analysis of the position in their Divisions by introducing a system of special commendations to the Garrison Engineers in their confidential reports for such work.*

33. The Committee would also refer to the considerably lower establishment charges incurred by the works services in some of the State Governments. *They would recommend that a systematic comparison between the M. E. S. organisation and those of the works agencies of the Central and State Governments should be undertaken with a view to finding out the reasons for the varying establishment charges as between the different works organisations and to arrive at the most economical and efficient methods of executing works. Based on the results of such an examination, the feasibility of entrusting progressively more and more works for execution to different agencies which have special advantages to work economically should be considered after assessing their capacity and resources and providing for augmentation of that capacity where necessary.*

#### **(b) Headquarters and Field Establishments**

34. The Engineer-in-Chief is assisted in his work by a Brigadier, Engineer Staff, Director of Engineer Stores and Plant, Director of

**Personnel and Director of Works.** The Brigadier, Engineer Staff and the Director of Works are of Chief Engineer's status and the other two are of Deputy Chief Engineer's status. These are assisted by officers of the status of Superintending, Executive and Assistant Engineers (the corresponding military ranks being Lieut. Colonel, Major and Captain), the Director of Works being also assisted by four officers of the status of Deputy Chief Engineer.

35. The Director of Works is responsible for works policy and procedure, the control and co-ordination of all works services and the M.E.S. organisation and establishment. He is assisted by four officers of the status of Deputy Chief Engineer, namely, the Deputy Director of Works, the Deputy Director (Designs), Chief Surveyor of Works, and the Chief Engineer, Airforce Works, who in turn are assisted by Staff officers Grade I in charge of Army, Factories, Naval and Air Force and E/M matters and Planning (all of Superintending Engineer's status) and Senior Architect and Superintending Surveyor of Works and other Grade II and Grade III Officers of Executive Engineers and Assistant Executive Engineer's status respectively. Similarly, the Brigadier, Engineer staff, Director of Engineer Stores and Plant and the Director of Personnel are assisted by Staff Officers Grade I, II and III.

36. The Chief Engineer of a Command is assisted by Deputy Chief Engineers, Works (and Planning, where necessary) and by Staff Officers Grade I for works, planning and designing, works progressing and budget, electrical and mechanical services, and engineer stores and plant, and by a Superintending Surveyor of Works for contracts and arbitration. These officers are in turn assisted by Staff officers Grade II and III, Civilian Administrative Officers Grade I and II and Surveyors of Works Grade I and II. The C.W.E. (Superintending Engineer) is assisted by a Deputy C.W.E. (Executive Engineer), Assistant C.W.E. (Asstt. Executive Engineer), G. A. O. Grade II Senior Barrack Stores Officers, Surveyor of Works and Assistant Surveyor of Works. The Garrison Engineers (Executive Engineers) are assisted by Assistant Engineers or superintendents Grade I (Non-gazetted) in charge of a sub-division. They are also assisted in certain places by Assistant Garrison Engineers in office work generally including administration, check measurements relating to contractors and scrutiny of estimates and contract documents.

37. The Committee find that certain engineering staff not connected with planning or actual execution of work are employed in the Headquarters offices of the M.E.S. at various levels, i.e. in the E-in-C's Branch and in the offices of the C. Es., Cs. W. E. and G. Es. The duties on which these engineer officers are employed include:—

- (a) Administration, namely, postings, transfers, promotion, pay problems etc. of the combatant and civil personnel;
- (b) Stores;
- (c) Recovery of rents for buildings and furniture.

It is observed that in the E-in-C's Office, some of the Officers under the Director of Personnel and the Director of Engineer Stores and Plant are engineer officers. The functions of the Personnel Section consist of Branch administration, co-ordination in establishment matters and disciplinary cases and the functions of the Stores Branch consist of provision review of Engineer Stores, Stores Budget, Foreign Exchange, standardisation and co-ordination not all of which would normally require the attention of Engineer Officers. Similarly, in the Chief Engineer's Offices, the Stores and Personnel sections are headed by Engineer Officers. Thus, in the three Commands 6 Executive Engineers and 9 Assistant Executive Engineers are employed in such positions. Further, in certain offices of the Garrison Engineers, Assistant Garrison Engineers, who are qualified engineers are employed for assisting the Garrison Engineers in office work which generally include administration, and scrutiny of estimates and contract documents. The Committee note that the M.E.S. Review Committee have considered this question of the employment of engineer officers in positions where the functions could be done by non-technical administrative officers and recommended that the types of work mentioned above should as far as possible be entrusted to non-technical officers, so as to ensure the best use of the available qualified engineer personnel. The Committee were informed that it was proposed to implement the recommendations of the M.E.S. Review Committee in course of time. *They would emphasise the necessity of a review being carried out for the purpose of replacing engineer officers by non-technical officers where the former are performing functions which could be performed equally well by the latter, so that technical men might be released for engineering activities.* It would be a sad commentary on the administration, if while facing difficulties in implementing development projects due to dearth of trained technical and engineering personnel, they are wasted on non-technical and administrative duties. Even in respect of Stores duties, where some specialised knowledge and experience will be desirable, it is not necessary to employ a full-fledged engineer, It should be sufficient to utilise departmentally trained persons with adequate experience.

38. The Committee find that in a Chief Engineer's office there are 7 sections for engineer operations and administration and training of Engineer Units, Planning, Works, Electrical and Mechanical Services, Engineer Stores and Plant, Personnel and contracts and arbitration, six of which are headed by officers of the rank of Superintending Engineers. There are 21 officers of the rank of S. Os. I (Superintending Engineers) working in the offices of the Chief Engineers of the various Commands. *The Committee feel that there is scope for reduction in the number of Superintending Engineers employed in the Offices of the Chief Engineer.* For instance, the Works, Plannig and Stores Sections at present functioning in C. E.'s offices under three different Staff Officers Grade I could with advantage be put under one Staff Officer Grade I who will be assisted by one or two Staff Officers Grade II. The Committee feel that in the



internal arrangement to be effected the types of duties which involve lesser responsibility should be entrusted to the S. Os. II. This would be in the interests of better co-ordinated planning of the works services as a whole and also of economy. *The Committee desire therefore, that a review should be carried out from this point of view and a reduction in the number of S. Os. I in the Chief Engineer's Offices should be brought about by amalgamation of Sections and entrusting their work to S. Os. II in suitable cases.*

39. The Committee notice that in the Southern and Eastern Commands there are two Deputy Chief Engineers to assist the S. E. and in the Western Command there is one Dy. C. E. The Dy. C. E. of the Western Command and one of the Dy. C. Es. in the other two Commands are intended to assist the Chief Engineer generally and to carry out such duties as are assigned to him by the C. E. The other Dy. C. Es. in Eastern and Southern Commands are said to be in charge of Planning, designing and preparation of contracts for works projects for which the C. E. is responsible. But in these Commands there are already Staff Officers Grade I (two Superintending Engineers and one Lt. Col. in Southern Command and one Superintending Engineer in Eastern Command) who are also said to be in charge of planning and designing of works projects for which the Chief Engineer is responsible. There are also Superintending Surveyors of Works who are responsible for preparation of contracts. The Committee, therefore, feel that the post of Dy. Chief Engineers to do almost the same work is not necessary. Also when it is considered that the Superintending Engineers are in the grade of Rs. 1300-60-1600 and are available to advise the Chief Engineer who is in the grade of Rs. 1600-100-1800, it is obviously unnecessary to have Dy. Chief Engineers in the grade of Rs. 1450-50-1550. *The Committee feel convinced that by a judicious delegation of powers internally in the C. E.'s Office, this anomalous and uneconomical arrangement could be changed and the posts of Dy. Chief Engineers abolished.*

#### (c) Workload and Capacity

40. The number of Areas and Divisions in the various Commands is given below:—

Command	No. of Areas	No. of Divisions
Southern	10	32
Eastern	7	23
Western	3	13

In addition, the Chief Works Officer in charge of the Naval Dockyard Expansion Scheme and other naval projects in Bombay area has one C. W. E. and 3 G. Es. working under him.

41. Each Area is under the charge of a Commander Works Engineers who controls on an average 3 to 4 Garrison Engineers in addition to Engineer Stores Parks/Engineer Stores Depots, located

in his area. The territorial control of the C. W. E. normally conforms to that of an Army Formation Headquarters.

42. Each Division is under the charge of a Garrison Engineer, who is the executive officer for works and controls on an average 5 Sub-Divisions. The extent of the territory for a Division under the control of a G. E. is limited by two factors— (a) volume of work and (b) administrative layout of Army Formation Headquarters. When large projects have to be carried out which are beyond the normal capacity of the G. E., a separate project G. E. is formed for that particular project. The G. E. (projects) has however no administrative responsibility *vis-a-vis* the territory covered by his projects.

43. The establishments, as already stated, are reviewed annually on the basis of the anticipated engineering load and generally on previous years' figures making due allowances for known variations. The average workload (comprising both capital and maintenance work) for a CWE and a GE is Rs. 102 lakhs and Rs. 33 lakhs respectively. As, however, maintenance involves far more work and labour as compared to an equivalent value of capital work, maintenance is computed at thrice the capital workload. On this basis, the average workload for a CWE and a GE works out to Rs. 204 lakhs and Rs. 66 lakhs respectively. The Committee were informed that in the Central Public Works Department, the yardstick for workload per division is Rs. 41:25 lakhs of construction load for a Construction Division and Rs. 8:25 lakhs of maintenance load plus Rs. 13:75 lakhs of construction load for a Construction-cum-Maintenance Division and that a co-efficient of  $3\frac{1}{3}$  is applied to compute the maintenance load in terms of construction load.

44. A statement showing the volume of work (original, maintenance etc.) done by each Garrison Engineer from 1954-55 to 1956-57 is reproduced at Appendix V. The following Tables showing the analysis of the statement will be of interest:—

**TABLE I**

*Statement showing the average workload per Division*

(Note: Average workload..... Rs. 33 lakhs)

(Figures in lakhs of Rs.)

Year	Original works	Main- tenance Services	Total	No. of Divisions	Average Work load per Division		
					Original works	Main- tenance Services	Total
1954-55	973	869	1842	56	17	16	33
1955-56	946	842	1788	61	15	14	29
1956-57	1078	846	1924	67	16	13	29

TABLE II

*Statement showing the average work load per Division computing maintenance as thrice the construction load*

(NOTE: Average workload — Rs. 66 lakhs)

(Figures in lakhs of Rs.)

Year	Original works	Main-tenance Ser-vices	Total	No. of Divisions	Average workload per Division		
					Original Works	Main-tenance Ser-vices	Total
1954-55	973	2,607	3,580	56	17	48	65
1955-56	946	2,526	3,472	61	15	42	57
1956-57	1078	2,538	3,616	67	16	39	55

TABLE III

*Distribution of Workload among the Divisions*

(NOTE: Average workload—Rs. 33 lakhs).

Workload	No. of Divisions having the Workload		
	1954-55	1955-56	1956-57
Over Rs. 80 lakhs	1	1	..
Rs. 70-80 lakhs	..	..	1
Rs. 60-70 lakhs	..	1	..
Rs. 50-60 lakhs	2	3	4
Rs. 40-50 lakhs	10	6	7
Rs. 35-40 lakhs	10	9	8
Rs. 30-35 lakhs	5	4	8
Rs. 25-30 lakhs	7	9	10
Rs. 20-25 lakhs	11	13	8
Rs. 10-20 lakhs	9	11	18
Below Rs. 10 lakhs	1	4	3
TOTAL	56	61	67

TABLE IV

*Distribution of workload among the Divisions (computing maintenance as thrice the construction load)*

(NOTE: Average workload — Rs. 66 lakhs)

Work load	No. of Divisions having the Work load		
	1954-55	1955-56	1956-57
Over Rs. 100 lakhs	6	5	3
Rs. 90-100 lakhs	4	4	3
Rs. 80-90 lakhs	6	7	6
Rs. 70-80 lakhs	4	5	9
Rs. 65-70 lakhs	4	1	4
Rs. 60-65 lakhs	5	4	4
Rs. 50-60 lakhs	9	6	9
Rs. 40-50 lakhs	6	15	6
Rs. 30-40 lakhs	5	3	10
Rs. 20-30 lakhs	3	3	3
Rs. 10-20 lakhs	4	5	7
Below Rs. 10 lakhs	..	3	3
TOTAL	56	61	67

45. It will be observed from the above Tables that for the Organisation as a whole, the average workload falls short of the yardstick of Rs. 33 lakhs for combined works and the average of Rs. 66 lakhs computing maintenance as equivalent to thrice the construction load; and that a majority of the Divisions are under-loaded and distribution of the loads among the Divisions is uneven. The figures in Table III and the figures in Table IV where the conversion factor for maintenance works has been taken into account reveal that whereas nearly one-third of the number of Divisions have a workload in excess of the yardstick, more than fifty per cent of the Divisions have a workload less than the average. It will be further noticed from the Statement at Appendix V that the workload is consistently less than the normal workload in the case of many Divisions *vide*, for example, items 1, 7, 8, 16, 19, 23, 27, 32, 33, 34, 35, 36, 43, 45, 48, 51, 52, 58, etc. It is also seen that there has been a progressive deterioration in the position during the three years under review, whether in terms of average workload or in terms of number of Divisions which were underloaded.

46. Regarding the reasons for the shortfall in the workload during the last five years, the Committee were informed that the policy followed was that of equal distribution of work to the various establishments, and that an annual review was made by the Ministry taking into account the actual load and sanctioned establishment.

Some of the Garrison Engineers who carried less load could perhaps take a little more, if more work was put on their establishments but it was said that levelling up was not always possible. The formulation of the workload was a long process and estimated workload did not always materialise due to various reasons. A long term programme during the Second Five Year Plan period for about Rs. 100 crores workload had to be cut down drastically. Further there was shortage of cement and steel and there was a general freezing order due to various shortages and also because of the necessity of conserving the country's resources. The Committee were further informed that when the workload in a station decreased, the station was downgraded from that of a Garrison Engineer's charge to an Assistant Garrison Engineer's. The Divisions at Khadakvasla III and IV and Vishakapatnam B.T.E. had been closed down and Ranchi, Agra, Kalaikunda were to be closed from 1st April, 1958. In regard to the Divisions like Ahmednagar, Madras, Shillong, Wellington, it was said the loads would be considered when reviewing the establishments. As regards the projects divisions, the projects were in the initial stages and the compiled figures did not reflect the engineering effort which was put in.

The Committee feel, however, that the approach towards this problem has not been quite systematic. *They feel concerned about the continued existence of unutilised capacity in the M.E.S. with all its implications in terms of the infructuous expenditure to the State and unutilised technical skill in the context of the prevailing shortage of technical personnel in the country. The Committee recommend that there should be a constant review regarding idle capacity and systematic efforts should be made to take up work from other Central Government or State Government Organisations, especially in the localities where the Divisions are under-loaded. The surplus staff assessed as a result of the review should be either transferred to other Divisions which are under-loaded or should be retrenched. Also there should be a better programme for creation of Divisions in accordance with a fully worked out plan for the execution of works.*

#### (d) Number of Divisions in an Area

47. The number of Garrison Engineers under a C.W.E. varies from 2 to 5, as illustrated by the following figures:—

No. of Areas having 5 Divisions	2
No. of Areas having 4 Divisiorts	7
No. of Areas having 3 Divisions	9
No. of Areas having 2 Divisions	3

48. The Committee were informed that there is no fixed formula for the number of G. Es. attached to a C. W. E. It depends on the amount of load or activity which a G. E. has to undertake and also on the geographical position of the C.W.E.

If an area was isolated and separated from the rest of the administration, e.g., Cochin, the number would be less. *The Committee consider it necessary that a standard should be laid down according to the nature of the work and that a review should be made in order to arrive at some uniformity.*

**(e) Expansion of M. E. S. for the Second Five Year Plan**

49. A Five Year Works Plan for the provision of accommodation for the three Services and the Ordnance Factories has been launched by the Ministry of Defence from 1956-57. The plan envisaged an expenditure of Rs. 100 crores during the five years.

The Plan called for certain reorganisation within the M.E.S. as well as some expansion particularly in the Planning Staff. The intention was to expand the establishments progressively as the Plan developed to its peak.

The following measures have been taken so far:—

- (a) Planning and Design Section of E-in-C's Branch has been reorganised and placed in charge of a Deputy Director (Colonel).
- (b) One additional Deputy Chief Engineer (Projects) has been authorised for Southern and Eastern Commands.
- (c) Certain additional Planning and Executive Officer appointments have been sanctioned.
- (d) Naval works in and around Bombay have been placed under the jurisdiction of the Chief Works Officer, Naval Dockyard Expansion Scheme to ensure better co-ordination and control.

50. The Committee understand that due to the uncertainty of funds for the remaining years of the Second Five Year Plan all further schemes for expansion have been stopped and that the Ministry are planning on an average of Rs. 12 crores a year, the expenditure in the Second Plan period being estimated to be about Rs. 60 crores on capital works. *The Committee would like to be assured that in view of the cuts in the size of the Plan, appropriate action has been taken to prune the establishment accordingly and effect the necessary savings.*

**(f) Planning and Designing Staff**

51. Major planning for all Naval and Air Force Works and for large Army Projects is done in the E-in-C's Office. There is a separate Planning and Designing Section in the E-in-C's Branch at Army Headquarters. This section is divided into cells which cater separately for Army and Factory Works, Naval Works and Air Force Works. The Section is headed by the Deputy Director (Designs) of D. C. E's status and assisted by one S. O. Grade I, four S. Os. Grade II and two S. Os. Grade III. The staff posted to these cells are specialists in one branch of engineering or another and they

acquire further considerable experience in a specific branch of planning and designing by virtue of their continuous association with a particular type of work. Officers are also sent abroad from time to time for further specialised training as necessary.

52. As all planning and designing of technical accommodation required for the Navy and Air Force is carried out at the E-in-C's Branch, Chief Engineers at Commands are only responsible for planning and designing of Army and Factory Works (unless otherwise ordered by the E-in-C) and domestic accommodation for the Navy and Air Force. No separate cells for the different services exist in the Planning and Designing Sections at the Chief Engineer's Offices. The total number of officers employed in Planning and Designing Work in all the Chief Engineer's Offices is 5 S. Os. Grade I, 12 S. Os. Grade II and 11 S. Os. Grade III. Planning for works costing upto Rs. 2.5 lakhs is done by S.W.Es. and for those costing upto Rs. 40,000 by the G.Es. *The Committee consider that while planning and designing of technical accommodation required for the Navy and Air Force may remain with the E-in-C's Office, planning and designing work for the Army and Factories in addition to the planning and designing work for the Navy and Air Force should be centralised as far as possible at the Command level. The C. W. Es. and G. Es. should be relieved to a very large extent of responsibilities for planning and designing and be left free to attend to their duties of supervision and execution. The Committee feel that if this is done, it will not be necessary to carry a fairly large complement of Planning and Designing staff in the establishments of the C.W.Es., and G.Es., and that it will lead to considerable economy by reduction in strength.*

53. With regard to the possibility of effecting reduction in the strength of the Planning and Designing staff on account of standardisation of the type designs of buildings, the Committee were informed that it would not be possible to effect appreciable reduction in the staff on account of the standardisation, since every project had to be intimately fitted with the ground and changes in designs due to considerations like the nature of local terrain, foundation, materials available etc., would have to be made. *The Committee feel, however, that standardisation of type designs could definitely lead to economy up to an extent. They would, therefore, recommend examination of the question from this aspect.*

54. As regards co-ordination among the Planning and Designs Sections in the C.E's Offices, the Committee were informed that there were periodical conferences of Chief Engineers of the various Commands and the E-in-C. at which different problems were discussed. The Committee are not sure whether a full measure of co-ordination in respect of the work of Planning and Designing could be achieved by such Conferences only. Since inadequate co-ordination might lead to duplication of effort, wasteful utilisation of technical manpower and unnecessary expenditure, *the Committee would*

*recommend that the Deputy Director (Designs) in the E-in-C's Office should be regularly posted with details of planning done at the various Commands, especially those with special features, so that he could issue suitable instructions to all the Commands. This would also help bring forward subjects of interest for discussion at the Conference of the E-in-C., and the C.Es.*

**(g) Surveyor of works branch**

55. The organisation of the Surveyors of Works cadre at the Headquarters of the E.in-C., and lower formations is shown in the following table:

Formation	Details of the SW Staff at each formation						Remarks
	CSW	SSW	SW*	ASW*	SAI*	SAII*	
E-in-C's Branch . . . . .	1	1	2	2	4	..	*The strength of staff in these categories may vary according to the works load.
CE Southern Command . . . . .	..	1	4	4	12	13	
CE Eastern Command . . . . .	..	1	4	4	10	10	
CE Western Command . . . . .	..	1	2	4	7	7	
CWO, NDES . . . . .	..	1	3	3	6	1	
CWE Office (Typical) . . . . .	..	..	1	1	3	3	
GE's Office (Typical) . . . . .	..	..	..	..	1	2	

56. The function of the Chief Surveyor of Works in the E-in-C's office is to render advice on contractual matters and particularly with regard to dispute with contractors, to evolve policy and procedure with regard to enlistment of contractors and arbitration, to revise M. E. S. contract forms and Schedule of Rates, to review billing position in Commands, to reply to Chief Technical Examiner's reports, to prepare typical Bills of Quantities etc. The function of the Superintending Surveyor of Works in C. E's Office is to render advice on contractual matters and particularly with regard to dispute with contractors, arbitrations and law suits; to prepare specifications, bills of quantities and other contract documents, to note points arising on the M.E.S. Schedule of Rates and contract forms for revision, to deal with enlistment/suspension/removal of contractors in respect of C. E's list, to review billing position in the Command, to exercise general supervision of the work done by the Surveyor Staff in all M.E.S. formation within the Command etc. Similarly, the Surveyor of Works in the C. W. E's Office and the S. A. I. (Surveyor Assistant)



in the G.E's. Office discharge identical functions in relation to the heads of the respective establishments.

57. The Committee learn that the Surveyor's cadre which was introduced in the M.E.S. in 1934 has contributed to economy and efficiency on account of a scientific and systematic approach being made to various problems. They also observed that a Surveyor of Works Organisation came into being in the C.P.W.D. from 1-6-55 and that there is a proposal to reorganise the Surveyor of Works Organisation in the C.P.W.D. on the lines of the M.E.S. The Committee understand that because of the absence of adequate facilities in the institutions in the country for training surveyors, officers recruited to the cadre require some special training at the C.M.E., Kirkee. It is understood that only a few engineering colleges provide a surveyor's course in their syllabus and that the Institution of Surveyors at New Delhi conducts examinations for Surveyors but does not impart training. *The Committee would recommend that having regard to the importance of the Surveyor of Works cadre in the Works Organisations steps should be taken to provide Surveyor's courses, both preliminary and advanced, in engineering colleges.*

#### (h) Recruitment

58. The posts of Deputy Chief Engineers and above are filled entirely by recruitment from Military Officers. While some of the posts of Superintending Engineers and below are also filled by induction of Military Officers, the method of recruitment of civilians for those posts is given in Appendix VI.

59. The Committee note that all departmental promotions to the posts of officers are made in consultation with the U.P.S.C. and all direct recruitment is made through the U.P.S.C. They notice, however, that no percentage has been fixed regarding the number of departmental promotees in respect of posts which are filled partly by direct recruitment. *The Committee have called for details showing the percentage of posts in the above category which are actually held by departmental promotees. The Committee recommend that in order to create a feeling of hopefulness and to evoke enthusiastic effort, minimum percentages should be prescribed in respect of the posts in this category which would be filled by departmental promotion.*

#### (i) Prospects for Civilian Officers

60. From the statement, given in para. 27, of expenditure on Military Officers and Civilian Officers employed in the M.E.S., during the years 1952-53 to 1956-57, it is seen that the percentage of expenditure on Military Officers to the total expenditure on Officers has been 12.8, 14.1, 19.4, 23 and 22 respectively. This shows there has been a progressive increase in the number of Military Officers, as compared to Civilian Officers, possibly at the higher levels.

61. The highest grade attainable by a Civilian Officer in the various M.E.S., cadres is as follows:

Cadre	Highest Grade
Engineer Cadre	Superintending Engineer (Scale Rs. 1300-60-1600)
Surveyor of Works Cadre	Chief Surveyor of Works (Scale Rs. 1600-100-1800)
Architect	Chief/Senior Architect (Scale Rs. 1300-60-1600)
Barrack and Stores Cadre	Senior Barrack and Stores Officer (Scale Rs. 600-40-1000-1000-1050-1050-1100-1100-1150).
Administrative Cadre	Civilian Administrative Officer Grade I (Scale Rs. 500-30-650-EB-30-710).

62. The Committee were, however, informed that the prospects of civilian officers were satisfactory in comparison with those in the C.P.W.D. and the Railways. Against the total strength of engineer officers at 650, 693 and 511 in the Railways, C.P.W.D., and M.E.S. respectively, the number of posts of Superintending Engineers and above in the three Departments was said to be 30, 29, and 31 respectively. It was also said that the promotion of civilian engineers in the M.E.S. was restricted upto the Superintending Engineer's (C.W.E's) grade only, since the officers above the rank of Superintending Engineers had to be military men as their duties involved not only running the works services but also administration of the Corps of Engineers and giving engineer advice to the G.O.C. on operational matters.

63. The Committee understand that the restricted prospects of the Civilian Officers in the M.E.S. as compared with their counterparts in other Government organisations are causing frustration and discontentment among the civilian officers, many of whom might be experienced engineers and not less qualified than their military counterparts who have better prospects of promotion. They feel that it may be not so much the number of posts available, compared to the other organisations, as the absence of an opportunity for further advancement that causes the discontent. The Committee notice that the M.E.S. Review Committee have also considered this problem and recommended that:

"Where officers are not required to deal with troops civilians should be considered for posts higher than C. W. E."

*The Committee consider this unexceptionable and hope that the principle would be accepted that where operational matters are not involved, an officer possessing the requisite engineering skill and competence could be entrusted with a technical job, notwithstanding the fact that he might not have been trained as a soldier. The Committee have considered separately the question of making the organisation entirely Civilian.*

64. As regards the officers of the Barrack Stores Cadre and the Administrative Cadre, the Committee notice that the maximum grades that they reach are those of Graded Staff Officers II and III respectively. The Committee have already remarked about the employment of Engineers on Stores duties and Personnel and Administrative duties. *If their recommendation that Engineer Personnel should not be wasted on such duties is accepted, it would incidentally throw open avenues for promotion to higher grades to the officers of these cadres, who would have gathered valuable experience in those activities but would have no prospects for promotion, otherwise.*

#### (j) Shortage of Technical Personnel

65. The Committee were informed that there was no pronounced shortage of technical engineering personnel in the cadre of officers whereas some shortage was experienced in the following categories:

Category	Total authorised (All India)	Shortage (1-7-1957)
Supdt. B R Grade I . . . . .	491	64
Supdt. B R Grade II . . . . .	850	111
Supdt. E M Grade I . . . . .	250	38
Supdt. E M Grade II . . . . .	438	54
Surveyors' Assistant Grade I . . . . .	186	16
Surveyors' Assistant Grade II . . . . .	190	46
Draftsman Grade I . . . . .	185	43
Draftsman Grade II . . . . .	269	29
Draftsman Grade III . . . . .	174	13
<b>TOTAL . . . . .</b>	<b>3033</b>	<b>414</b>

66. The Committee were also informed that the main shortage of skilled technicians was in the category of draftsmen, and that the shortage was due to the paucity of trained men available as also to better terms offered by private firms to draftsmen. It was expected that since a large number of institutions was growing up for training of draftsmen the position would ease shortly. *The Committee, however, desire that this question should be examined from the larger aspect of availability of technical personnel of middle and lower*

*grades to meet all the needs of the country. Such an examination should take into account the existing short supply, the growing needs, arrangements to meet them, and the terms of employment. The Committee also feel that if the problem of short supply of technical personnel of this type to Government departments is in a large measure due to the grade of pay offered to them, it should be taken up seriously for examination and remedial measures worked out.*

#### (k) Re-employment of retired men

67. The Committee learn that retired Civilian Engineers could be re-employed in consultation with the U.P.S.C. but generally the retired civilians found employment elsewhere. The Adjutant General helps to rehabilitate the retired Military Officers and subordinate personnel.

68. It is understood that there are good tradesmen with the Corps of Engineers who are ordinarily in short supply in the civilian market, and that the reservists are not generally employed by the private industry due to their going away for training for a month every year. *The Committee would suggest that it may be examined whether the training of these people after finishing their colour service could be dispensed with, especially if they are employed in the same technical job for which they are trained. While examining this matter, it may be kept in view that by making this relaxation, they may have greater opportunities for employment in other Government bodies, private firms and also in the Community Project areas where they may be used for reorientating the skill of the local people.*

69. It was stated that the employment of draftsmen, surveyors and others who retire from the Corps of Engineers in Government Departments could be further facilitated if in their case the rule that requires recruitment to be made only through the Employment Exchange is relaxed. *The Committee recommend that this may also be examined. The feasibility of registering such persons in the Employment Exchanges while they are in the last lap of service may also be considered.*

#### (l) Temporary Staff

70. The total number and proportion of permanent and temporary staff of the civilian employees is as follows:

	Perma- nent Number	Percent- age	Tempo- rary Number	Percent- age	Total
Officers . . . . .	180	28%	456	72%	636
Class III Service . . . . .	2099	22%	7308	78%	9407
Class IV Service . . . . .	453	10%	4154	90%	4607
Industrial Class III . . . . .	1708	24%	5351	76%	7059
Industrial Class IV . . . . .	4883	34%	9641	66%	14524
<b>TOTAL . . . . .</b>	<b>9323</b>		<b>26910</b>		<b>36233</b>

It will be observed that the percentage of temporary personnel of all categories in the M.E.S. is very high. The Committee were informed that the strength of the permanent employees had been fixed with reference to the year 1952 and that the Organisation had since expanded, the projects on which the expansion had taken place being all temporary. The finalisation of the permanent establishment depended on a stable workload. It was also said that a review of the permanent establishment would be made as soon as final action was taken on the recommendations of the M.E.S. Review Committee regarding a stable workload, the proportion of military to civilian personnel etc.

71. *The Committee are not convinced that the above reasons fully explain a large section of the staff being temporary.* The workload during 1952-53 was Rs. 19.57 crores whereas during 1956-57 it was Rs. 21.84 crores. The increase has only been 11.6 per cent. Also whereas the total expenditure incurred on the civilian personnel in the M.E.S. was Rs. 219.21 lakhs in 1952-53, it was Rs. 263.69 lakhs in 1956-57. This shows an increase of about 20 per cent. part of which would be accounted for by normal increments of pay and allowances to the staff and only the balance would indicate additional posts. *Therefore, it is reasonable to infer that even on the basis of the workload of 1952 a fair percentage of permanent posts had not been created. The Committee would urge that this matter may be very carefully examined and early action should be taken to fix the number of permanent posts on a reasonable basis.*

## IV WORKS

### (a) Simplification of Procedure

72. There are four main stages in the evolution of a project, namely,

- I. Administrative Planning.
- II. Technical Planning.
- III. Execution.
- IV. Winding up.

Each of these stages is sub-divided into further phases. Stage I, namely, Administrative Planning is the responsibility of the Staff, Engineers only being called upon to provide estimates. Stages II and III are the responsibility of the Engineers, except that where acquisition of land is involved, it is progressed through the Staff channels and the Military Lands and Cantonment Services. Stage IV requires the coordinated action of the Engineers and the Defence Accounts Department.

The division of responsibility in progressing a project through Stage I and the duties of the Engineers under Stages II, III and IV are shown in sequence, in the statement reproduced at Appendix VII.

73. From the statement it is observed that various preliminaries involving several stages have to be carried out before a work is accepted in principle, then again before the necessity is accepted, administrative approval obtained, funds allotted, contract documents prepared and tenders invited. The Committee were informed that most of the stages were essential as they marked the logical evolution of the planning and creation of a project. In certain suitable cases, for example, in those cases where projects were conceived in Army Headquarters it was possible to telescope two or three stages into one since the lower authorities could proceed straightaway to convene a Board that could go into the siting of the project, the cost of the project, submission of approximate estimates etc. As regards the procedure in other Departments, it was said that the difference between the procedure in the M.E.S. and the procedure in the other works services Departments of the Government was largely a difference in terminology, as for instance 'Administrative Approval' and 'Expenditure Sanction' in the civil Ministries really corresponded with the 'Acceptance of Necessity' and 'Administrative Approval', respectively on the military side. It was said that the system followed in each Department was evolved to cater to the special requirements of that Department.

74. The Committee, however, understand that no systematic study has been made in comparing the procedure adopted by the various Works Organisations viz., the C.P.W.D., Railways, State P.W.D.'s and the M.E.S. *They would recommend that a comparative study should be made of the procedure followed in all the works organisations and certain uniform standards including simplification of procedure, common terminology evolved which could be applicable to all. The uniform standards so arrived at might be followed by all the Departments with such modifications as are necessitated by the circumstances peculiar to each Department.*

**(b) Delays on account of preliminaries to works**

75. On an average, the time taken from the issue of administrative approval to the commencement of work varies from six months to two years. Besides the magnitude and nature of the work, there are other factors which materially affect the time required to commence a work, namely:—

- (i) Time taken for procurement of stores, action regarding which can be taken only after funds are actually allotted;
- (ii) Time taken for technical planning, preparation of contract documents, issue of tender documents and receipt of tenders from contractors, and difficulties in planning simultaneously for a number of projects which have been administratively approved; and
- (iii) Changes in requirements due to unforeseen developments in certain cases which lead to recasting of a project even after the issue of administrative approval.

76. The Committee find that considerable delay occurs at present during the stages prior to the commencement of the work. The M.E.S. Review Committee have considered in detail the delays on account of preliminaries to work under the existing procedure. They have found that it takes about a year from the date of initiation of the demand to the date of receipt of indication of costs by the Service Headquarters. It takes six months to 2 years thereafter before administrative approval is given. It therefore follows that there is a time lag varying from six months to two years before the commencement of works. The M.E.S. Review Committee came to the conclusion that the delays occur mainly due to inadequate and piecemeal planning, lack of firmness of users' requirements and too many checks of approximate estimates. In order to remedy these defects that Committee made certain recommendations both regarding procedure and the delegation of powers.

77. It may be seen from what has been stated above that the position is far from satisfactory. Action on the lines suggested by M.E.S. Review Committee may reduce delays to an extent. Also simplification of procedure after a comparative study is made as suggested in para 74 above will help to reduce these delays. *The*

*Committee also feel if the work is approached with a sense of urgency and responsibility a good portion of the delay would be eliminated. Authorities responsible for taking decisions at every stage should consider matters in a complete form and arrive at firm decisions. At every stage careful attention should be given to planning at inadequate planning at each stage would only cause delays in successive stages. Responsibilities at each stage should be fully realised and should be shouldered by the designated authorities, without any attempt to pass them on to others, above or below them. Also care should be taken even at the very early stages that engineer efforts in terms of preparation of estimates etc. are not wasted on projects which are not likely to materialise or which may receive only a very low priority.*

78. The Committee notice that the M.E.S. Review Committee have recommended that users should not be permitted to make any changes after the approximate estimates have been prepared. There is a view that the ban on change of users' requirements should not be absolute. It is said that projects take about two to three years and during this period ideas may change and a change in the estimates should be permitted. The Committee, however, feel that there would be two types of cases. One type would be where some very major factors are involved like the location of a unit, which may be affected by an unforeseen and important development. But the other type would arise only because of some change of personality or change of some idea without any great principles being involved. *The Committee are of the view that no change should be made on account of the latter types of cases. In their view the cases of unforeseen major development which make changes imperative would be so few and far between that the rule could be adopted that no change in users' requirements would be made after approximate estimates are prepared. While providing for exceptional cases mentioned above, it should be made clear that it should be approved by a very high authority, who should satisfy himself personally about the need for the change and then only order it.*

79. The Committee were informed that a reason for delay was also the bulk system of planning which resulted in administrative approvals being received by the Engineers in bulk for the whole year's work. It was said that they were also often accompanied by intimations regarding allotment of funds, leaving little time for the Engineers to devote attention to the further details and to all the projects simultaneously. The situation was, however, stated to be improving and efforts were being made to ensure that administrative approvals came out in April of the year preceding the year in which the works were to be executed. *The Committee hope that immediate steps will be taken to ensure that while only the minimum number of stages will be retained, they are also properly phased out. This would even out the load of work on the Engineers as well as the administrative authorities and will itself lead to quickness and*



efficiency. At the same time, the Committee consider it necessary to ensure that they do not become unduly long drawn out. *They would suggest that a workable time table should be laid down to be adhered to normally, and a review should be made periodically to examine cases where the time table is exceeded. From time to time, as efficiency improves, the time table should be modified to introduce better standards and the matter should be kept under continuous review.*

80. The Committee obtained a statement showing the projects costing over Rs. 5 lakhs approved from 1954-55 to 1956-57 showing estimated cost, the date of administrative approval, date of allotment of funds and date of commencement of works. *They observe that even after the funds are allotted, there is considerable delay before the work is commenced. A number of cases in which the delay has been 7 months or more are listed in Appendix VIII. The Committee find that several of these cases are not explained by the reason advanced that the administrative approval and the allotment of funds are communicated simultaneously. They, however, hope that the remedial measures suggested by them in the foregoing paras will eliminate such delays also.*

### (c) Departmental execution of works

81. At present most of the M.E.S. Works are executed through contractors and only a small portion through departmentally employed labour. It is understood that departmental execution is resorted to only in certain types of cases like routine maintenance of a petty nature, urgent maintenance where contractors are not available at competitive and reasonable rates and where there are special difficulties in giving the work to the contractors. The relative percentages of the amount of works carried out by departmental as against contract agencies are as follows:—

	Departmental	Contract
Original work	.. 8%	92%
Maintenance	.. 32%	68%

The amount of works executed departmentally during the last 5 years is:

Original work	.. Rs. 310 lakhs.
Maintenance work	.. Rs. 1550 lakhs.

82. The Committee have looked into the question of enlarging the scope of works executed through departmentally employed labour. They were informed that the special difficulties in doing so are the continual enlistment and retrenchment of labour which would be necessitated by the workload not being uniform, shifting of labour from one station to another, special concessions that would have to be given to labour employed by Government, the necessity to increase the stores organisation and the supervisory staff and the

higher cost that usually departmental execution entails. The Committee were informed that the quality of work done through departmental execution was better, but that the cost was higher. They find that the M.E.S. Review Committee have also considered this question and have come to the conclusion that departmental execution should be resorted to only in certain circumstances.

83. The Committee, however, feel that the elimination of the middle-man's profit is an important factor in favour of the departmental execution of works. They feel that while it is true that departmental execution is costlier at present, there is no justification why it should continue to be so. If the contractor adheres to the specifications and yet could complete the work at a lower cost and earn a good percentage of profit, there do not seem to be insuperable difficulties in reducing the present high cost of departmental execution. If on the other hand the quality of contractual work is not up to the required standards, it would mean that Government is not getting the value for the money spent. As regards the argument that departmental officers will not be able to extract as much work from labour as contractors, it would seem that the suggestion is either that labour is exploited by the contractors or that the efficiency of the Department is not up to the mark. In either case, the position is unsatisfactory. *Therefore, while agreeing that much would depend on labour leadership, the extent of development of civic sense and the willingness to give a full measure of outturn, the Committee would recommend that opportunities must be taken every now and then to undertake departmental execution of works in suitable cases and standards must be set not only of quality of work, but also of efficiency of organisation, economy and fair deal to labour.*

**(d) Execution of works through other works organisations**

84. It is understood that the M.E.S. get works done through outside agencies and State Governments in special circumstances, for example, if the work is of a specialist nature, such as railway sidings, P. & T. works etc. or where works are of casual occurrence and they do not justify the setting up of a M.E.S. formation. Also it is stated that at Delhi and Simla M.E.S. Works are carried out by the C.P.W.D. by special arrangement. The Committee find that in the last three years works costing over Rs. 116 lakhs were got done through other agencies. Out of these, the works done at Delhi and Simla by the C.P.W.D. accounted for over Rs. 91 lakhs.

85. The Committee understand that out of about 150 stations where M.E.S. formations exist, there are 25 stations where C.P.W.D. and/or State P.W.D. function side by side. It is, however, stated that the M.E.S. Organisation has to exist in these places as the Military Engineer in the station is also the adviser to the local Military Commander and also in certain cases the works carried out by the M.E.S. are of a special nature connected with the Army, Air Force

and Ordnance Factories requiring close liaison with the concerned officers. It is also stated that the C.P.W.D. and State P.W.D. are heavily loaded with work and would not be able to undertake additional work on behalf of the M.E.S. The Committee, however, find that no systematic examination has been conducted to ascertain whether these Organisations should function concurrently in the various places. They feel that close coordination between these Works Organisations would definitely lead towards economy. They would, therefore, suggest that an objective study should be undertaken at a few of the stations where different Works Organisations exist side by side to find out whether one of them can handle the responsibilities of the others also by a suitable understanding among them. Administrative difficulties could be overcome by an imaginative approach keeping in view the basic objective of efficient and economic utilisation of national resources in the shape of technical man power, material and finance.

#### (e) Departmental charges

86. Departmental charges are levied by the M.E.S. at the rate of 14% for works done for Air Force/Navy/Ordnance Factories and at the rate of 24½% for works done for other bodies like C.P.W.D., State Governments, Cantonment Boards etc. The Committee learn that the C.P.W.D. levies Departmental charges on a slab system ranging from 9½% for works costing Rs. 5 lakhs and above to 17½% for works costing Rs. 40,000 and below, and that the Railways levy 12½% on the total cost of the work (wages and materials) including the cost of land, except where a rate higher than 12½% is charged to Government departments on a reciprocal basis.

87. The Committee were informed that in the case of the Navy, Air Force and Ordnance Factories, the charges consisted of 11% establishment charges, 1½% audit and 1½% T. & P. charges and were adjusted by a block transfer made at the end of the year, and were revised in the case of wide fluctuations in the actual establishment charges. As regards the higher charges levied for works done for other bodies, the representatives of the Ministry agreed that it was a high percentage and stated that the charges were being reduced to 15 per cent. The Committee do not appreciate the need for the levy of departmental charges by the M.E.S. on works executed for any of the Defence Services. Even as regards the levy of departmental charges, among the works Services of the Government of India and the States, the Committee would suggest that the feasibility of doing away with the system should be considered. If, however, it is not possible to abolish this system altogether it should at least be kept at a uniform and minimum basis.

#### (f) Maintenance

88. Maintenance work in the M.E.S. comprises (i) maintenance of buildings, communications, furniture etc. and (ii) maintenance of electric and water supply installations.

(i) *Maintenance of Buildings, Communications etc.*

89. Funds for the maintenance of buildings, roads and installations are demanded by the M.E.S., C.P.W.D. and the Railways as indicated in Appendix IX. The maintenance costs of buildings in the M.E.S. are said to be reasonable and compare favourably with those of the C.P.W.D. It was stated that maintenance rate for roads in the M.E.S. was, however, inadequate and far below that of the C.P.W.D. The question of increasing the rate was stated to be under consideration. *The Committee would suggest that as a part of this examination it should also be examined whether the C.P.W.D. rates are on the high side.*

90. Both in the C.P.W.D. and the M.E.S., funds are provided for maintenance of buildings and internal electrical installations on the basis of the capital cost of buildings, whereas in the Railways funds for normal maintenance of the buildings are demanded and allotted on unit basis—one unit being equal to 100 sq. ft. of plinth area. The Committee are unable to understand the need for different systems even for these matters. *They would suggest that a common principle should be evolved for all the different works services regarding the basis of providing funds for maintenance, and that an examination should be conducted with this end in view. The States may also participate in such examination.*

(ii) *Maintenance and operation of Installations*

91. 52 electrical installations and 152 water installations are operated by the M.E.S. It is understood that the economy of the installations is judged by comparing the cost of production with the corresponding figures for the previous years and also with the figures of similar Defence installations at every station. However, it is said that high costs are inescapable where the installations have got low capacity or where isolated units have to be catered for or where due to special defence needs special equipments and standby units have to be maintained.

92. The Committee are informed that wherever possible the requirements of water and electricity are met from civil sources. They also understand that in certain cases civil supply was augmented to meet defence requirements and *vice versa*. They, however, notice that no systematic study has been undertaken with a view to finding out the capacity and adequacy of civil supply to meet defence requirements in all the stations. *They would, therefore, suggest that a study of this kind should be undertaken, so that it could be determined in what cases the capacity of the civil installations or the defence installations should be augmented.* In all these cases negotiations should also be taken in hand with the civil authorities and amounts provided in the relevant budgets for setting up or increasing the capacity. *The Committee desire that while considering this matter attention should not be confined by each party*

*to its own needs, but the question should be looked upon as one of general interest, leading to increased civic amenities and general well-being of the people.*

#### **(g) Reduction of Maintenance Cost**

93. One of the duties of the C.W.E. is to prepare and submit schemes designed to reduce maintenance costs. The Committee were, however, informed that no schemes for reducing maintenance costs had been received from the C.W.E.'s. It was stated that there was very limited scope for effecting changes in techniques or methods of reducing the cost of maintenance. Suggestions were often made on improvements in the specifications in order to reduce the recurring charges on maintenance. These suggestions were not, however, consolidated in the form of reports but were discussed at the periodical conferences of the E-in-C. and the Chief Engineers. The Committee, however, feel that there is much scope for suggesting measures for reducing maintenance costs especially in respect of running of water and electric installations, the C.W.E. being responsible for maintenance of the water and electric installations also. *The C.W.Es. should, therefore, be encouraged to submit periodical reports on the aspects of reducing maintenance costs of buildings, roads, installations etc., and the reports should be scrutinised in the Planning and Designs Section of the E-in-C's Branch for eventual adoption of common standards in all the Commands.*

#### **(h) Residential Accommodation**

94. The actual provision of residential accommodation to the officers and men in the Defence Services is given in Appendix X. It is understood that as against the original expectation to spend nearly Rs. 168 crores for both residential and other accommodation during the Second Five Year Plan, which would have enable an expenditure of Rs. 77 crores on residential accommodation only, the total allotment in the Plan for all types of accommodation was only Rs. 89 crores. It was, therefore, more difficult to meet the requirements for accommodation of Service personnel. It is stated that to some extent semi-permanent structures costing about 20 per cent. less than permanent structures would be put up. Also where huts could be built from local material a scheme known as "Tentage Replacement scheme" would be introduced. *While the Committee appreciate the difficulties in solving the problem of accommodation they feel that the non-availability of funds cannot be the limiting factor to the extent it is believed, since a considerable proportion of funds sanctioned is allowed to lapse.*

95. It is understood that the Committee of Experts for Building Works appointed by the late Ministry of Works, Production and Supply recommended that some indication of reasonable ceiling costs of various types of buildings would be a useful guide to the engineers and architects and would also encourage them to explore methods to bring down the cost of buildings without sacrificing the essentials.

*The Committee understand that while the M.E.S. have fixed ceiling costs on plinth area basis they have not done in the same manner as is done in the C.P.W.D. It is said that since M.E.S. build accommodation all over India uniform scales cannot be laid down. The Committee, however, feel that it should be possible to work out ceiling costs of buildings in different areas by adopting the methods suggested by the Experts Committee. They would, therefore, recommend that early steps should be taken in this direction in the interest of economy.*

96. *The Committee observe that the scales of residential and office accommodation are more liberal on the defence side than on the civil. They were informed that the Defence Minister's Committee and the Cabinet had examined this matter and it was felt that a slightly better type of accommodation was necessary for officers to keep up their morale. Where the Defence Officers were living along with civilian officers at certain stations the scales were said to be identical, but where the Defence Officers were living in isolated places the scales were a little more liberal. The Committee are unable to appreciate the argument regarding morale, as the liberal scales of accommodation would necessarily entail greater expenditure on the construction of officers' quarters and to that extent would affect the construction of additional accommodation of married quarters for the Other Ranks whose needs for such accommodation are met at present only to the extent of 9 per cent. They would, therefore, recommend that the scales of accommodation for the civil and military officers should be uniform and should be made as austere as possible.*

#### (i) Vacant Buildings

97. The following figures show the charges on account of rent of buildings hired/leased, rent of requisitioned buildings and 'miscellaneous' charges which mainly represent charges on account of payment to chowkidars on care of vacant buildings.

(In lakhs of Rupees)

	1952-53	1953-54	1954-55	1955-56	1956-57
(i) Rent of Buildings hired leased . . . . .	50·15	50·33	52·66	48·57	61·20
(ii) Rent of requisitioned buildings . . . . .	14·94	18·03	13·94	6·15	3·19
(iii) Miscellaneous . . . . .	28·77	25·84	23·23	26·91	20·21

98. It will be observed that heavy amounts are being paid on account of rent of hired/leased and requisitioned buildings while on the other hand considerable amounts are being paid to chowkidars for the care of vacant buildings. Regarding the reasons for buildings remaining vacant when there is a great need for accommodation, the Committee were informed that the buildings in question were of

two categories, namely, hired or requisitioned and Government owned. The buildings remained vacant when the units stationed in those buildings went out on operations elsewhere. The buildings could not be given to others as they might be required after three or four months by the units which returned. *The Committee desire that it should be examined whether the buildings which are expected to remain vacant for a long time can be handed over to meet the requirements of other Central Government or State Government agencies and also whether care of such buildings could in suitable cases be entrusted to the State Government Departments having similar responsibility locally.*

#### (j) Specifications and Designs

99. Type designs and specifications are said to have been finalised and issued for several categories of accommodation. As regards economy in design it is understood that Government have appointed a Committee known as the M.E.S. Construction Committee to consider the question of bringing down the cost of construction by the M.E.S. That Committee was appointed in May, 1956 but have not presented their Report so far. In this connection the Committee would observe that the M.E.S. Construction Committee consists of— (1) Deputy Secretary, Ministry of Defence (Chairman), (2) Additional Chief Engineer, C.P.W.D., (3) Deputy Financial Adviser, Ministry of Finance (Defence), (4) Deputy Secretary, Ministry of Works, Housing and Supply, and (5) the Director of Works, E-in-C's Branch, Army Headquarters. *The Committee feel convinced that for an examination of the nature entrusted to the M.E.S. Construction Committee, it would have been useful if non-officials with necessary knowledge and experience had also been included. Such an association was almost indispensable in this particular case since the terms of reference of this Committee include a comparison of the specifications used by the M.E.S. with those used by private enterprise. The Committee would emphasise that as a rule while appointing any committee to enquire into matters with a view to reporting on economies, efficiency of administration, improvement of technique etc. non-officials should be associated, as Members.*

## CONTRACTS AND CONTRACTORS

### (a) Enlistment of Contractors

100. The Committee understand that an Inter-departmental Committee had been appointed in the Ministry of Works, Housing and Supply to examine the problems arising out of the existence of different sets of rules of enlistment contractors in the Central Public Works Department, the M.E.S. and the Railways and to prepare draft rules for the enlistment of contractors which can be applied uniformly in all these Departments. It is also stated that the Ministry of Works, Housing and Supply, in consultation with the Ministries of Home Affairs, Defence, Irrigation and Power, Communications and the Central Public Works Department, have drafted a general code for registration of contractors and for demotion, removal, suspension of business and blacklisting etc., of building contractors.

101. At present, the contractors are registered separately by the three departments according to certain rules framed by them. The classification of contractors varies from one department to another. It was represented to the Committee that the system of registration of contractors separately with the different departments had the following disadvantages:—

- (i) blocking of a substantial amount of money of the contractors with all departments;
- (ii) difficulties caused to the contractors due to the varying procedures and categories of classification in the different Departments; and
- (iii) consequent reduction in the scope of competition.

102. But the Committee were also informed that a contractor could tender for a work in the M.E.S. even though he may not be registered as an M.E.S. contractor, if he is on the approved lists of the Central Public Works Department, State Public Works Department or the Railways. *The Committee, however, consider that it is not necessary to have separate lists of contractors for the different works organisations. They are of the view that a consolidated list would give wider scope for selection and also stimulate competition by facilitating enlistment of contractors in greater numbers. They would, therefore, suggest that there should be a common consolidated list of contractors for all works organisations. This should be on an All-India basis for the higher categories and on a regional basis for the other categories, the categories being determined after discussions among the representatives of the different Departments. There should be a central co-ordinating body to maintain the*



*register of contractors and to act as a clearing house for information relating to the performance and reliability of the contractors. Suitable procedure should also be devised to ensure that a contractor is employed only within the limits pertaining to his category and is not overloaded with work.*

**(b) Demotion removal and suspension of contractors**

103. It is understood that Confidential Reports of contractors are submitted to the enlisting officers in the prescribed forms. Based on these reports, each enlisting officer maintains a register known as 'Record of contractors'. Any contractor whose workmanship, organisation or financial arrangements are adversely reported upon is either down-graded, removed or suspended for a specified period as considered appropriate in each case. A contractor is black-listed where (i) there are sufficient and strong reasons to believe that the contractor or his employees have been guilty of malpractice (ii) the contractor contumaciously refuses to return Government dues, and (iii) the contractor or his partner or his representative has been convicted by a Court of Law for offences involving moral turpitude in relation to business dealings or where security considerations including suspected disloyalty to the State so warrant, the blacklisting orders in the last case being issued by the Ministry of Home Affairs.

104. The Committee find that it is a common grievance of contractors that they are not given a chance to explain their position to the authority passing the final orders before action regarding demotion, removal, suspension or blacklisting etc. is taken against them. The draft code for demotion removal, suspension and blacklisting etc., of building contractors drafted by the Ministry of Works, Housing and Supply is said to provide that as regards demotion and removal from the approved list the orders should be communicated to the contractors together with reasons for the action taken and that in the case of demotion a competent authority may at its discretion give the contractor an opportunity of showing cause against the proposed action, whenever the authority is satisfied that the circumstances of the case require that the contractor should be called upon to explain his position. Regarding suspension of business and blacklisting, it is said that the orders and reasons should not be communicated to the contractor concerned.

105. The Committee were informed that during the three year period 1955-56 to 1957-58, the numbers of contractors who were downgraded, removed, suspended by the various authorities in the M.E.S. were 7,335 and 313 respectively. It was stated that three contractors were blacklisted during the last three years. It was further stated that even according to the present procedure the contractor was fully aware of his shortcomings and that remarks about his performance were given in the works diary and adverse remarks communicated to him by letter, and it was found from practice that the procedure had a most salutary effect on the contractor. The representatives of the Ministry were of the opinion that giving a chance to the contractor to defend himself might involve litigation but

that there would be no objection to the orders in each case being passed by the next higher authority of the same executive organisation, who would be detached from the problem. *The Committee, however, feel that the procedure should be such as to infuse confidence in the contractor that action has not been taken arbitrarily. For this purpose, the Committee feel that an advisory Committee consisting of non-officials should be constituted at each Command and their advice taken before passing orders on the contractor. This would fortify the action of the executive and save them from unfounded allegations regarding their motives and also give an assurance to the contractor that action has not been arbitrary. To the extent that the contractors need not be afraid of arbitrary exercise of executive power, it will also reduce the scope for corruption.*

106. The reports in respect of works executed by contractors of Class 'A' (no limit class) are submitted by the Chief Engineers to the Engineer-in-Chief. The E-in-C. Keeps the other Chief Engineers informed of such adverse reports. It was stated that it was also proposed to introduce a similar procedure in respect of Class 'B' contractors. But there is no system at present to exchange notes with other Departments with regard to the performance of the contractors. It is understood that in the draft code that has been prepared there is provision for coordination between the various Departments by circulating the orders to the different Ministries. *The Committee do not consider the present position to be satisfactory, since it is possible for a contractor adversely reported upon in one works organisation to get work in another. Immediate steps should be taken to introduce the necessary coordination between the different works organisations. If as recommended by the Committee a consolidated list of contractors is kept by a central coordinating body, coordination in respect of this matter would become very simple.*

107. The Committee understood that at present the lists of contractors registered are not reviewed periodically. Action is taken on the basis of confidential reports written on the performance of the contractor. It is, therefore, possible for a contractor who is registered but who had not yet been given a job to have failed to satisfy the conditions required for the registration or for the particular categorisation since he had been originally registered. It is understood that at times contractors engage engineers staff to satisfy the requirements of registration and dispense with their services thereafter. *The Committee would, therefore, recommend that a periodical review of the lists of contractors should be made so as to ensure that contracts are not awarded to those who do not satisfy all the requirements.*

#### (c) Discussions with Contractors

108. The Committee note that periodical meetings have been held by the Ministry of Works, Housing and Supply with the representatives of the various associations of contractors in order to secure fullest understanding and mutual confidence between the Central Public Works Department and the contractors and that the Chief Engineer, Central Public Works Department

also holds formal meetings with the representatives of contractors for listening to their day-to-day difficulties. Asked whether there was a similar procedure in the M.E. S. the Engineer-in-Chief stated that he had a meeting with the contractors' association once. *The Committee feel that periodical meetings should be held with the representatives of the contractors since such a system would, besides giving an opportunity for redress of genuine difficulties felt by contractors in execution of the work and in getting payments, also result in a greater degree of understanding between the Department and the contractors.*

**(d) Associations of Contractors**

109. The Committee feel that the associations of contractors can do very useful work in toning up the quality and efficiency of the construction works in the country. *They are of the view that if the associations are organised in the manner of professional bodies with pride in their work and lay down a code of conduct for their members to be enforced by them, it would not merely be to their benefit but would also indirectly help to tone up the efficiency of the Engineering Departments of Government and would help remove undesirable practices, wherever they exist. It is understood that the Engineer-in-Chief has already suggested to the Builders' Association of India to organise themselves better. He is said to have also suggested that they should have a pool of mechanical equipment which could be hired by different contractors and that they should also arrange to establish technological schools to train up painters, bricklayers and other workmen. The Committee hope that the associations would seriously take up these suggestions. The authorities may also take up and encourage drawing up a code of conduct by the Association.*

**(e) Publicity for invitations to Tender**

110. Tenders are invited by advertisement in newspapers if the value of work to be executed exceeds Rs. 1 lakhs and by displaying notices on notice boards if the value is less than that. The Committee were informed that the selection of the papers for advertising was left to the Advertising Consultant to the Government of India who did the same also through the language press. *The Committee notice that the M.E.S. Review Committee have recommended that in cases of works of Rs. 1 lakhs and over, the advertisement should appear at least once in one local language paper and twice in English papers and if the value of the work is more than Rs. 10 lakhs, it should be advertised in important papers of other big towns also. While agreeing with this view generally, the Committee would recommend that in order to create keener competition Indian language papers should be used to a greater extent as a medium of publicity in all cases of contracts, big or small. In cases of works of more than Rs. 10 lakhs in value, advertisements should be made in the important language papers of other regions also. The Committee also suggest that a copy of the notice together with the tender documents should be supplied to the office of the recognised associations of contractors.*

### (f) Time for Submission of Tenders

111. The Committee were informed that due to the pressure in planning that existed after partition, sufficient time was not being given to contractors for submission of tenders, but that it has now been stipulated that a period of at least six weeks after the issue of the tender documents should be allowed to enable contractors to acquaint themselves with site conditions, and to consider factors like planning, labour etc. *The Committee came across complaints that contractors find difficulties in getting tender documents in time and complete in all respects. They recommend that it should be ensured that there is no ground for such complaints.*

### (g) Issue of Tender Documents

112. Tenders are normally issued to all approved contractors of the M. E. S. who apply, provided the work falls in the category for which a contractor is enlisted and are also issued in some cases to contractors who are not on the approved list but who as a result of enquiries made before issue of tenders are considered capable of executing the work and are otherwise suitable for enlistment with the M.E.S. Tenders are not, however, issued to a contractor, if—

- (a) he is overloaded;
- (b) his performance has not been satisfactory in the past;
- (c) he has committed serious irregularities in the past; and
- (d) his financial position is not satisfactory.

113. The Committee were informed that in cases where tender documents were not issued to applicants, the reasons were recorded in writing by the issuing authority and that the Controller of Defence Accounts looked into these reasons during his periodical visits. The system of preliminary selection was said to be adopted with a view to eliminating contractors to whom the contracts were not likely to be awarded. But they understand that a similar system is not followed in the Railways and the Central Public Works Department. They would point out that exclusion of a contractor at a preliminary stage and preventing him to compete with others, without communicating reasons, would cause a genuine misapprehension to the contractor about the fairness of the decision. The officer is also exposed to allegations, under this system. *The Committee would, therefore, recommend that an advisory body including non-officials should be constituted at different levels, and the advice of such a body sought before taking a decision not to issue the tender documents. In the opinion of the Committee, such a system will inspire confidence and as stated in para 105 earlier, also reduce chances of corruption and allegations of corruption.*

### (h) Opening of Tenders

114. The Committee understand that at present all the tenders are not being opened in the presence of contractors. In the case of item rate and percentage rate contracts, however, tenders are usually opened in the presence of all the contractors and the rates are announced and in other cases, tenders are opened in the presence of two officers of the Department. The practice in the Central Public Works Department and the Railways, is however, that all tenders are opened in public. The M. E. S. Review Committee have recommended that the tenders should be opened in public but that it should be made clear at the time of announcing the rates that they were subject to checking. The Committee were informed that the recommendation of the M. E. S. Review Committee was under consideration but that it was generally felt that it would not be to the advantage of the State to open lump sum tenders in the presence of the contractors because the tenderers would know as to what exactly were the rates quoted in the first round and keep the rates up in the second round if there was need to go for a re-tender.

*115. The Committee recommend that generally the tenders should be opened in the presence of contractors. However, in case for any special reasons, it is not considered feasible to do so, an advisory body consisting of non-officials as suggested in paras 105 and 113 should be associated with the opening of the tenders.*

### (i) Contracts

#### (i) Lump Sum Contracts

116. A note on the different types of contracts entered into by the M. E. S. is given in Appendix XI. The Committee understand that the Lump Sum Contract with Bills of Quantities is an ideal system of contract for building works being easy to administer provided the type of work attempted is standardised completely and there are no deviations. When there are deviations in the course of the execution of a contract difficulties arise in the shape of problems connected with the settlement of disputes with the contractor over measurements of items of work affected by the deviations. The Committee were informed that it had not so far been possible for this Department to prepare Bills of Quantities for all Lump Sum Contracts in view of the fact that the existing Surveyor of Works Staff was not sufficient to prepare Bills of Quantities within the short time normally given to them for preparation of tender documents. It was said that buildings were being slowly standardised and Bills of Quantities worked out, but the work was enormous there being hundreds of types of buildings such as stores, workshops, buildings at hill stations and plain stations etc. The Committee understand that the system of Lump Sum Contracts with Bills of Quantities is used to a large extent in the U.K. and that the M.E.S. Review Committee have also recommended its adoption on a large scale. The Committee are also of the view that this type of contract has got

advantages over other types of contract especially in securing realistic and cheaper quotations from contractors. *They would, therefore, recommend that efforts should be made to facilitate the adoption of this form of contract to a greater extent and for this purpose energetic measures should be taken to reduce the scope for deviations through proper planning, to speed up the work connected with standardisation of buildings and also to enlarge the scope for training of Surveyor of Works Staff.*

#### (ii) Term Contracts

117. It was represented to the Committee that Term Contracts in the M.E.S. are indefinite as regards magnitude of each type of work and allow wide discretion to the Engineer-in-Charge. The Committee were informed that the system of indicating provisional quantities of anticipated requirements to the contractors was tried some years back, but it was found in practice that the actuals differed widely from the estimates. This gave rise to claims by contractors and in one case the dispute was referred to arbitration and was decided in favour of the contractor. The matter was then examined in consultation with the Ministries of Finance and Law and it was considered advisable not to indicate provisional quantities in Term Contracts. The Committee do not however feel that the present system is satisfactory in as much as a contractor entering into the contract would not know the quantity of work he might be required to do. Under the present system it would also be possible for the Engineer to make the contractor do certain items of work only, excluding other items and choose the items in such a manner that the contractor would not get those items in which he had hoped to make a profit but would get only those which would entail a loss. *They would, therefore, suggest that provisional quantities of the work to be done under a Term Contract should be calculated with a greater degree of approximation on the basis of works done previously and indicated in the contract.*

#### (j) Deviations

118. Deviations from the accepted contract are said to be due to—  
 (i) non-availability of the materials which are to be incorporated in the work according to the original plan (ii) technical reasons and (iii) administrative reasons, i.e. additions or omissions of certain items required by the users. The limits of deviation have been laid down for the various types of contracts. The M. E. S. Review Committee have analysed the position regarding “deviations” which is said to be a fairly common feature in the M.E.S. and which has led to considerable delays in final payments because of the Lump Sum Contract system, under which deviations have to be measured and accepted by contractors. The Committee were informed by the representatives of the Ministry of Defence that in order to minimise deviations, planning was being tightened up, and that technical planning had since shown a marked improvement. *Considering the extent to which deviations contribute to delays in execution of work*

*and to delays in payment of bills, the Committee would suggest that an analysis should be made of the cases of deviations that arise every year, grouping them under the various factors that give rise to delay and a systematic study be made with regard to the ways and means of reducing the incidence of such factors in future. It would be desirable that before effecting any substantial deviations, a prior understanding is reached between the two parties as far as possible.*

119. Further, the Committee noticed from a statement furnished by the Chief Engineer, Eastern Command that out of 55 contracts in which deviations were ordered in that Command from 1954-55 to 1956-57, the deviation limit was indicated as 25% in the case of 40 contracts, 20% in the case of 5, 10% in the case of 9 and 5% in the case of 1. The actual deviations were below 10% in the case of 47 contracts. The Committee are not able to understand why the upper limits of deviations are fixed above 10% in most cases, though on the average the actual deviations fall short of this limit. *The Committee would suggest that the question of reducing the upper limits of deviations be considered since such a procedure would encourage greater care in planning and in preparation of contract documents.*

#### (k) Issue of Stores to Contractors

120. The Committee were informed that the estimates of the quantities of stores required for the works were prepared in advance and adhered to at the time of making issues to the contractors. It was said that in order to ensure that the stores were fully utilised in works and that the stores did not find their way into the market, checks were exercised through the medium of the time progress chart of the works. In addition, it was stated that the Engineer-in-Charge was in constant touch with the progress of the works physically on the ground and visited the sites quite frequently. *The Committee, however, found a belief in responsible quarters that the estimates, especially in respect of cement, were made on a liberal basis and that the contractor was obliged to draw the entire quantity provided, though the work could not consume all that. The Committee consider that this matter deserves a probe.*

121. *The Committee would like to commend for examination the suggestion that Cement should be supplied to the contractor through Silosite (wherein loose cement is poured in and then taken out as and when required by mechanical method) and not through cement bags, in the case of works costing above Rs. 2 lakhs, so that pilferage might be prevented.*

122. The Committee would point out in this connection that in the case of big projects, particularly if the construction is of R.C.C. and where the value of cement and steel supplied by department would amount to a large percentage of the cost of the project, the profit allowed in the tender is on the cost of the whole project whereas the actual outlay of the contractors is only some percentage

of the cost of the whole project. In other words, the provision for profit really amounts to much more than the profit that a contractor is normally entitled to on his actual outlay. *Since this procedure leads to an inflation in the cost of the works, the Committee suggest that in projects of high magnitude where the M.E.S. undertake the issue of main stores, the contract value should be based on "Except Cement" and "Except Steel" rates so that the contractor's allowance of profit would be based on his capital outlay, that is, total cost of work less cost of steel and cement. The Committee believe that this will lead to more competitive quotations and even if it does not, the Government would know the real percentage of profit that the contractor gets.*

### (1) Extensions to period of contract

123. Out of 989 contracts (other than term contracts) entered into between 1950-51 to 1956-57 the period of completion originally provided for in the contracts had to be extended in respect of over 462 contracts. This number is made up as follows:

Extension not exceeding one month:	72
Extension over 1, but not exceeding 3 months:	149
Extension over 3 months, but not exceeding 6 months:	137
Extension over 6 months but not exceeding 12 months:	75
Extension exceeding 12 months:	29
	<hr/> *462.

\* (This does not include figures from Eastern Command. Although this information was promised, the Committee regret to observe that the same was not furnished until this report was finalised.)

124. The common grounds on which extensions of time are allowed are said to be as follows:—

- (a) Ordering of extra work;
- (b) Changes in design, etc., being ordered at a late stage;
- (c) Delay in issue of stores or tools and plants by Government;
- (d) Non-availability or shortage of specified materials in the market;
- (e) Inclement weather;
- (f) Labour strikes;
- (g) Delay in handing over the site of work or the buildings in which works are to be carried out;
- (h) Difficulty in procurement of wagons;
- (i) Breakdown of water supply.



125. The Committee learn that in respect of each contract, a time and progress chart is maintained, which shows the planned time for the supply of stores and for execution of each item of work, and that once a work has commenced its progress is watched through the medium of a monthly progress report which is rendered by the Garrison Engineer concerned through engineer channels to the E-in-C. This progress report is said to show not only the progress of work but also brings out bottlenecks and the assistance required.

Despite this, the number of cases where extensions of period have to be given in the contracts is very high.

*The Committee would, therefore, suggest that the actual method of maintenance of the Time and Progress Chart should be scrutinised to see if it is on a realistic basis and whether the charts are properly studied and made use of. Also cases where extensions of period became necessary should be reviewed to see if they were solely due to unforeseen factors which could not have been avoided through proper planning and prompt action at every stage. The Committee would point out that extensions to contracts have a tendency ultimately to increase the cost of the works besides putting the contractor concerned at an advantage over the others who tendered on the basis of a specified period of completion, and would, therefore, emphasise the desirability of proper planning with the object of reducing the incidence of the various factors which go to increase the number of cases where extensions in time of completion have to be granted.*

126. The Committee observe that delays in completion of works are also caused by delay in issue of stores or Tools and Plant by Government and delay in handing over the site of work or the buildings in which works are to be carried. The contractor is not responsible for such delays but he has to incur extra overhead charges on this account. The Committee were informed that in respect of such cases the contractors were at liberty to approach the Government for arbitration or to go to the civil courts for decisions. The Committee, however, believe that contractors are likely to make provision in their rates for such stoppages of work or extensions to contract. This, therefore, shifts the burden ultimately to Government. *The Committee would suggest that the feasibility of introducing a clause in the contract providing for compensation to contractors in cases of delays which are not attributable to the contractors should be examined. This would keep the officers of the department alert in the discharge of their responsibilities, and might enable more favourable terms in the tender.*

#### (m) Specification laid down in the contracts

127. It is a grievance of the contractors that the specifications of bricks, wood work etc. laid down in the contract agreement are often very high and do not correspond to the availability of the material in the local market, and hence provide a source of harassment to the

contractors besides resulting in malpractices. On the other hand, the Committee were informed that the contract document stipulated the types of raw materials required and sufficient time was given to the contractors to find out if they would be able to procure those materials. The Committee feel that in case materials of a specified standard, for example, bricks, are not easily available, there should be a rational adjustment of specifications with reference to the materials available, and that a review should be made of such cases with a view to effecting modifications in specifications in accordance with the conditions that prevail in different regions.

#### (n) Contract Forms

128. The Committee understand that contract forms for the various types of contracts used in the M.E.S. have been standardised. They learn that a model form of contract was drafted by the Indian Standards Institution based on a study of the rules of various departments, and that a Committee in the Ministry of Works, Housing and Supply have also examined the question of simplifying the contract forms taking into account the forms in use in the M.E.S. which are stated to be on par with the system obtaining in advanced countries. *The Committee feel that an earnest attempt should be made to evolve a standard contract form for use in all the organisations of the Government of India based on a study of the different forms in vogue in various Departments and that for this purpose a Committee consisting of representatives of the various Departments and experts from the Building Industry and Engineering profession should be appointed to make a thorough examination of the question and bring about uniformity in the contract forms. It would be desirable if the States also could participate in the work of evolving standard forms of contract with a view to achieving uniformity in respects of the State also. In the opinion of the Committee a standard and simplified contract form will ensure free and healthy competition. It would also reduce the chances of contractors making provisions in their quotations for various disadvantageous clauses, which may occur in the present forms, without serving any practical purpose or being actually used by Government for their safety or protection.*

#### (o) Schedule of Rates

129. The Schedule of Rates is a compilation of rates for each item of work commonly executed by the Organisation and is compiled on the basis of a study of labour and material costs in various areas. For this purpose the country has been divided into seven zones. The Schedule is revised periodically, the last four revisions having been in 1937, 1942, 1947 and 1954. It is now proposed to revise the Schedule every five years. Amendments to M.E.S. Schedule rectifying serious errors and discrepancies are issued every two months or earlier where necessary. The Committee have enquired into the feasibility of hav-

ing a common Schedule of Rates on a regional basis for Works Departments. They were informed that it was desirable to have a common Schedule but it was not practicable to do so on account of large variations in terminology, units of work and methods of measurement, as between the different Departments. It was stated that the Indian Standards Institution was working on the problem of standard units of work and methods of measurement. The Committee observe that a common schedule is also connected with standard specifications and designs for similar types of buildings in all the Departments which they have advocated in para 96 of Chapter III and is also connected with standardisation of contract forms. *The Committee would emphasise the importance of having a uniform Schedule of Rates on a regional basis for use in all the Departments, for common types of work, since it would result in greater competition from contractors and would also ensure that the staff would be adaptable to any type of work whether it is in the M.E.S., Railways or the Central Public Works Department.* Considerations regarding the size of the common Schedule should prove to be no bar to its adoption, when balanced against the other undoubted advantages that might accrue, notable among which will be the possibility of easier inter-departmental distribution of work-load when circumstances so warrant. *The Committee recommend, therefore, that the work of evolving common terminology, units of work and methods of measurement should be speeded up, and a common schedule on a regional basis drawn up for use by all the Works Services of the Government. To carry out the work involved in this and to speed it up the services of retired engineers of the M.E.S., Central Public Works Department and Railways should be utilised.*

#### (p) Preparation of Bills

130. The regulations require the contractors to prepare their bills, but in actual practice, the contractors' bills are prepared by the M.E.S. It is said that this practice is allowed to exist, since the contractors do not normally have the facilities by way of technical staff etc. to prepare the Bills. *The Committee, however, feel that contractors should be encouraged to prepare their bills since the time of the supervisory staff in the M.E.S. could be saved to that extent. Also there would be greater expedition in the submission of bills, the contractor being the most interested party.* This would also eliminate the delays that are now said to occur on account of the contractor not concurrently certifying the measurements and would reduce the points of dispute. *The Committee are of the view that this should be insisted upon in the first instance, in the case of the bigger contractors, and in the case of the others it should be gradually brought about.* The Committee do not anticipate a complete dislocation even in the case of the smaller contractors as the need will possibly be filled by the rise of a professional class of people, who would prepare bills, even as there is at present a professional class now to draft petitions etc. *If on the contrary, it is considered that there*

*are insuperable difficulties in following the present rule, the Committee would only suggest that the rule, should be changed to suit practice.*

**(q) Recoveries from Contractors**

131. The recoveries due from the contractors at the end of each year for the last five years are given below:

Year ending 31st March	Recovery due
	Rs.
1953 . . . . .	16,19,000
1954 . . . . .	15,00,000
1955 . . . . .	15,99,000
1956 . . . . .	14,60,000
1957 . . . . .	14,09,000
<hr/>	
Total amount likely to become irrecoverable	5,98,787
Total amount waived . . . . .	4,11,769

Of the total amount outstanding approximately 50 per cent. is due against war-time contractors for the period 1941-46. Most of these cases are pending in court whilst in some cases contractors are not traceable.

The remainder of the recoveries outstanding is due to reasons such as:—

- (i) works carried out on behalf of contractors as a result of default or abandonment.
- (ii) Arbitration awards in favour of Government, recoveries being enforced through legal action.
- (iii) Over-payments discovered during audit or Technical Examiner's check.

*The Committee are concerned to note that a large amount is due for recovery from contractors. They would emphasise that very energetic measures should be taken to enforce the recoveries and to keep a systematic watch over the progress of recoveries.*

**(r) Arbitration**

132. Disputes arising out of a contract are referred to arbitration, provision for which is made in the contract. The arbitrator is an Engineer Officer and is appointed by the Engineer-in-Chief in the case of the Chief Engineer's contracts and by the Chief Engineer in

other cases. Though contract documents do not make any mention of the rank of the Engineer Officer to be appointed as arbitrator, the convention is to appoint an officer not below the rank of Lt. Colonel or a Superintending Engineer (Civilian) in G.Es'/C.W.Es. contracts and also in C.Es' contracts where the problem involved is not of an intricate nature. In contracts accepted by C.Es where the amounts in dispute are considerable or some important principle is involved an Engineer Officer of the rank of Brigadier or Colonel is appointed. The arbitrator appointed is, however, an Engineer Officer other than the one concerned with administration of the contract.

133. It is understood that the system of arbitration is generally the same in C.P.W.D. except that the arbitrator is the Chief Engineer/Additional Chief Engineer or some other person appointed by him. The person normally appointed as Arbitrator in the C.P.W.D. is a Superintending Engineer who may or may not be the Engineer Officer administering the contract; the choice of the Superintending Engineer so appointed depends on the load of work with the various Superintending Engineers at the time.

134. It was stated that the question of appointing an independent arbitrator was considered in the past and it was decided that the present system should continue since it had worked properly there being no complaint. The fact that 66% of the cases decided during the last 5 years were in favour of the contractors was pointed out as a testimony to the impartial nature of the arbitration. Independent arbitration was not preferred because of the likely delays in the settlement of cases, extra cost on account of pay, establishment etc. for the independent arbitrators, and shortage of technical personnel. It is understood that independent arbitration was tried once in the form of joint arbitration, where the party to the dispute found his own arbitrator and the other party, the Government found its own arbitrator but the experiment proved a complete failure.

135. *The Committee are not convinced that the present system is in accordance with the fundamental principles of justice.* While the contractor cannot feel completely assured about the impartiality of an officer belonging to the department with which he has a dispute, the officer is also placed in an embarrassing position, since his impartiality will be doubted even if, purely on merits, he has to decide in favour of the department. From this angle, it will be difficult to accept the argument that impartiality of the officers is indicated by their deciding 66 per cent. of the cases in favour of the contractors.

136. *The Committee understand that the normal practice in the U.K. is that an independent arbitrator is selected from among those who are members of the Institute of Surveyors, the Institute of Architects, the Institute of Civil Engineers etc. and that in certain cases*

*an eminent citizen is also appointed an arbitrator. The Committee are of opinion that a similar practice should be followed. Public spirited men could be found in the ranks of the retired engineers in this country who might be depended upon to do the job as a sort of public duty on payment only of allowances for sittings and travelling. The Committee suggest that an experiment be made in the first instance at a few places by appointing an independent arbitrator acceptable to both the parties and if the experiment works successfully, the procedure might be adopted on an extensive scale, and a panel of independent arbitrators consisting of architects, retired engineers or persons selected from the Institute of Engineers may be appointed for the purpose.*

(s) Review of arbitration cases

137. The statement showing the cases referred to arbitration and cases decided in favour of Government and in favour of contractors during the last five years is given below:—

Number of cases	Amount of claim award	
	By For Government	By For Contractors
	Rs.	Rs.
(i) Cases referred to arbitration . . . . .	386	*21,23,500
(ii) Cases decided		
(a) in favour of Govt. . . . .	112	**6,67,200
(b) in favour of contractors. . . . .	214	**20,58,200
	Period	No. of cases
(iii) Cases out standing . . . . .	1952-53	1
	1954-55	3
	1955-56	56
		60
		Amount of claim
		3,746
		37,931
		18,14,843
		18,56,520

138. The Committee understand that reasons for the decisions of arbitrators going in favour of contractors in about 66 per cent. of the cases, had not been examined nor have they been analysed in order to find out what were the administrative defects which contributed to such a position. *The Committee consider it very necessary that a*

\* Claims.

\* Awards.

*review of all the arbitration cases should be made so that lessons may be drawn from them, suitable instructions may be drafted and steps taken to improve procedure where it is revealed to be defective.*

*139. The Committee find that there are 60 cases of arbitration remaining outstanding for a long period. Considering that all the cases are referred to departmental arbitration, they find it hard to reconcile these instances of delay in the arbitration by departmental officers with the argument that independent arbitration might result in delays. However, they recommend that energetic action should be taken to dispose of the cases outstanding for a long time.*

## VI

### INSPECTION AND TECHNICAL EXAMINATION

#### (a) Inspection of Works

140. According to the instructions issued by the E-in-C, inspection of works in progress is required to be carried out as follows:—

S. D. Os. Each work costing

- (a) Upto Rs. 5,000 . . . Once a week.
- (b) Rs. 5,000 to Rs. 20,000 . . . Twice a week.
- (c) Above Rs. 20,000 . . . Daily.

G. Es. (a) Each original work costing upto Rs. 5,000 . . . Twice during the execution of the work.  
 (b) Works between Rs. 5,000 and Rs. 40,000 . . . Once a fortnight.  
 (c) Works above Rs. 40,000 . . . Once at each important stage of the work.

C.W.Es. Works above Rs. 40,000 . . . Once a month in station and at least once in 3 months in out-stations.

141. Important works in progress are also inspected by C.Es. from time to time to secure that the work is being executed in accordance with the approved design; that supervision is efficiently directed to ensure that the quality of materials and workmanship is in accordance with the specifications; and that the work is proceeding expeditiously.

The Engineer-in-Charge of a work and Superintendents Grade I are also personally responsible for the accuracy of all measurements taken by themselves or by their subordinates. They are required to satisfy themselves, by a judicious check at site, of a proportion of any measurements taken by their subordinates. Similarly, a G.E. or an officer authorised by him is required to check a proportion of all measurements taken in his Division.

142. The Committee were informed that wholetime supervision was done by a Superintendent Grade I in the case of a five lakh project and by an Assistant Garrison Engineer in the case of a ten lakh project. Some of the A. G. Es. have one or two Grade I Officers under them and each Grade I officer has two to three Grade II Officers—Overseers under him. In other words, for a ten lakh project, there will be four to six Overseers and for a five lakh project, there will be two to three Overseers.



143. *The Committee notice that the M. E. S. Review Committee had come to the conclusion that at the moment the officers were not doing enough inspection because they were loaded with office work. It is, therefore, seen that to a very large extent the quality of works is certified only on the basis of the supervision made by the Superintendents and Overseers.. The Committee do not consider this satisfactory. They hope immediate steps will be taken to enable the Engineers to do more of inspection and satisfy themselves about the quality of the work done.*

144. *The Committee also noticed that the contractors had a feeling that supervision by the supervisors of the Departments was excessive. There is a view that it is irksome for the engineers of the contractors to deal with subordinate officials of the department all the time. Perhaps the real drawback is that due to the inadequacy of inspection by engineers of the department reliance is entirely placed by the department on the subordinate officials who remain on the spot. In such a situation, it is possible that the subordinate officials actually wield greater powers than it was intended to confer on them. It could possibly lead even to corruption. The Committee, therefore, consider that this question has to be given careful attention. The Committee would recommend that experiments should be carried out at some places where the contractors executing the work are firms of standing and employ qualified and experienced engineers and technical staff of their own, to reduce the extent of departmental supervision by subordinate officials. If the experiment is successful it may gradually be extended. Meanwhile, suitable measures should be taken to ensure that all contractors employ competent and qualified engineering staff and take full responsibility for detailed supervision.*

#### (b) Technical Examination

145. The technical examination of works is conducted by the Chief Technical Examiner who functions under the Q.M.G. at Army Headquarters. The Chief Technical Examiner is responsible for:—

- (a) Taking test measurements during the progress of works;
- (b) Checking a percentage of accepted contracts and amendments;
- (c) Technical examination of M.E.S. final bills after payment.
- (d) Checking of Casual Personnel Bills and Muster Rolls in respect of works carried out by directly employed labour.

146. The full charter of the duties of the Chief Technical Examiner is given at Appendix XII. It will be observed that emphasis is placed in many cases in carrying out checks and measurements before final bills are submitted so as to prevent loss to Government by the detection of errors before payment. For example, the check by the C. T. E. on measurements should be carried out soon after

measurements have been taken and recorded by the M. E. S. Such a check will also include examination as to whether the work has been executed according to the quantity and quality specified. The check on the percentage of accepted contracts is to be exercised within a month of the receipt of the contract in the C.D.A's Office. Check of final bills is to be completed generally within three months of their receipt in C. T. E's Office, the C. T. E's Staff being authorised to visit the site of works for an on-the-spot check if necessary.

147. The C. T. E's Organisation is headed by the Chief Technical Examiner of Works who is assisted by two Staff Officers and some ministerial staff. There are three field officers under the C.T.E.—one in each Command, located in the offices of the Controllers of Defence Accounts each office being under the charge of a Technical Examiner. The entire technical staff for the C.T.E's Organisation and the ministerial and Class IV establishment for Technical Examiners' Offices in Commands is found from M. E. S. While employed under the C. T. E., they are governed by the terms and conditions of service as in the M. E. S. and are inter-changeable with personnel of similar grade and status in that Department.

148. The Technical Examination Branch works in close touch with the Controllers of Defence Accounts. The C. T. E. brings to the notice of the E-in-C. serious irregularities noticed during technical examination coming within the scope of his charter. Similarly Technical Examiners at Commands bring such irregularities to the notice of Chief Engineers. Half-yearly reports are submitted by the C. T. E. to the E-in-C, Q.M.G., D.A.D.S. and Ministries of Defence and Finance (Defence) but not before the observations are forwarded in draft form to the E-in-C's Branch and the draft paras are suitably modified to the extent the M.E.S. are able to satisfy a part or whole of the observations. The E-in-C's Branch forwards the reports to Chief Engineers in Commands with instructions to lower M.E.S. formations with a view to avoiding recurrence of the irregularities and as a guidance for future works.

149. The Committee note that a good deal of controversy exists about the usefulness of the C.T.E.'s Organisation as it exists at present. The main reasons in support of its retention are—(i) the organisation acts as a very salutary check on the quality of M.E.S. construction; (ii) there are certain inherent advantages in an independent technical audit and having an all-round check, the intangible results of which should be regarded as impressive, though concrete achievements may not be very great. The Committee note that the Public Accounts Committee considered such an organisation useful and recommended a similar organisation for the C.P.W.D. where it has come into existence recently.

150. On the contrary, the M.E.S. Review Committee which went into this subject at great length had recommended that the Organisation should be abolished and that the work relating to scrutiny of

contracts at present performed by the C.T.E. should be transferred to the Chief Surveyor of Works while the inspection of works should be undertaken in a more intensive manner by senior Engineer Officers. The main reasons in favour of abolition of the Organisation were stated as follows:--

- (i) Works should be criticised by those who are responsible for their completion since it would be dangerous to divorce power from responsibility.
- (ii) The organisation undermines generally the authority of the superior engineers. This organisation works against the sense of congenial atmosphere among the engineers which would lead to better and efficient work.
- (iii) The net saving on account of the organisation is negligible and therefore the organisation has not achieved any substantial results.
- (iv) The contractors are not happy because they are never sure whether when they have been paid their bills they would not be required to refund a part of it, if the C. T. E's criticism has been agreed to by the E-in-C. This leads to the possibility of contractors providing for a likely refund by giving high quotations in their tenders, thereby increasing the cost of the works.

151. The Committee are, however, convinced of the need for an organisation of this kind in exercising a technical audit over execution of works considering that the effects of such a check would reflect themselves in better quality of works executed as well as in increased efficiency in the Department as a whole. They do not consider that the arguments that are advanced in favour of abolition of the organisation are quite valid. An inspection or audit organisation does not lead to a divorce of power from responsibility. If worked in proper manner, it need not undermine the authority of the engineers. The results achieved by such an organisation are not to be judged by the savings actually effected, but by the vigilance exercised by them and the awareness of that vigilance on the part of the executive agency. Also, if the present method of working interferes with the course of executive action or causes inconvenience to contractors, the procedure could be changed. *The Committee are of the view that an independent technical audit could be quite as useful as the statutory audit conducted by the Comptroller and Auditor General with regard to the accounts of the Central and State Governments the benefits of which are well recognised. They feel that this agency, if properly utilised, can be a means for eradicating many of the evils now prevalent in the Engineering activities of Government. The solution to the many problems which have been considered as militating against the continuance of this organisation should be found in reshaping its structure so as to fulfil the role of*

*an independent external technical audit. The charter of duties including the scope of technical examination, the time limit within which such examination should be completed etc., should be suitably laid down so that any defects noticed at present may be removed. In this connection the Committee find that the scope of duties of the Chief Technical Examiner in the C.P.W.D. is wider than that in the M.E.S. In the former case it extends to watching justification for (i) deviations (ii) extension of time of completion of works, as well as to carrying out laboratory test of materials etc. The Committee would suggest that the Organisation should be so built up as to be a common technical audit agency in respect of all works service organisations under the Central and State Governments.*

152. With regard to the method of recruitment of staff for the organisation, the Committee enquired whether the present position regarding interchangeability of staff between the M.E.S. and the C.T.E. would not affect the independent nature of the technical examination. The representatives of the Ministry agreed that it would be so, if technical audit were to be entirely independent of executive authorities but that the examination by the C.T.E. was in the nature of an internal technical audit with regard to works in the same manner as internal check exercised by the Defence Accounts Department in regard to accounts. The independence of the organisation was maintained to the extent that the C.T.E. was independent of the E-in-C and normally did not go back to the cadre under the E-in-C. Further, the Officers were drawn from the M.E.S. in consultation with the C.T.E. and were appointed for a fairly continuous period in the C.T.E's Organisation. The Committee were, however, told by the C.T.E. that there were one or two cases where people working under the C.T.E. in one Command, had to go back to the M.E.S. Organisation in the same Command and were placed in an embarrassing situation arising out of the comments they made on the same Organisation, but generally there had been no difficulties since there was a working agreement between the E-in-C and the C.T.E. that an officer of the C.T.E. Organisation who had worked in a particular Command was not normally posted back to the same Command on reversion to the M.E.S. From the experience gained so far, it was said that the officers from the M.E.S. generally adopted themselves well to their role as Technical Examiners. Regarding the scope for creating an independent cadre of officers for the Organisation, the Committee were told, that it was not practicable to do so in the context of the limited prospects available in the present Organisation, there being only 9 such officers. *The Committee are, however, convinced that an examination of the type carried out by the C.T.E. could be undertaken efficiently and without fear or favour only by a completely independent cadre of officers. The Committee are of the view that such an independent cadre should be built up, especially in view of their recommendation that there should be one organisation to conduct an independent technical audit of the works executed by the various organisations.*

## VII

### FURNITURE, PLANT & MACHINERY AND STORES

#### (a) Specifications and designs of furniture

153. The Committee understand that the specifications and designs of various types of furniture used in the M.E.S. have been standardised and are reviewed from time to time with a view to bringing them in line with modern trends and scales of accommodation. *The Committee would suggest in this connection, that as far as possible Common specifications and designs of furniture should be adopted by all Departments of the Government including the Railways so that there may be a certain measure of uniformity in maintenance and in provision of funds for renewal besides economy.*

#### (b) Provision for renewal

154. The following percentages are adopted in demanding funds for the renewal of furniture in the C.P.W.D. and the M.E.S.:

#### M. E. S.

Prior to 1-4-46	. . . . .	2½% of capital value.
After 1-4-45	. . . . .	1½% of capital value.

#### C. P. W. D.

<i>Furniture</i>	<i>Durable</i>	<i>Non-durables.</i>
Gazetted Officers . . . . .	3%	8%
Clerk's Qrs. . . . .	7%	12%
Clerk's Hostels . . . . .	5.25%	13%

*The Committee recommend that the M.E.S. should also adopt the system as the C.P.W.D. of assessing the percentage of renewals separately on the basis of durable and non-durable furniture since the value under each category is likely to be considerable. The Committee would also like to draw the attention of the Ministry of Works, Housing and Supply to the fact that the basis for demanding funds for the renewal of C.P.W.D. furniture is very much higher than the one adopted by the M.E.S. The matter requires examination with a view to reduce it to a reasonably low figure. The Committee would recommend the adoption of a uniform basis.*

## (c) Plant and Machinery

155. The Committee understand that out of the wartime accumulations of various types of machinery, 992 numbers (consisting of pumps, motors, etc.) having a book value of Rs. 27·16 lakhs approximately have been declared as surplus. These are either non-rationalised items or beyond economical repair. The Committee learnt that a detailed review of the remaining plant and machinery was in progress.

*The Committee regret to note the delay in the matter of reviewing the surpluses out of the wartime accumulations. Such delays not only prevent the use of those stores for other beneficial purposes, but also lead to their deterioration and ultimate loss. The Committee would, therefore, emphasise the need to complete this review early.*

## (d) Tools and Plant

156. Tools and Plant are issued to contractors on hire if stipulated in the contract. Hire charges are levied in accordance with the regulations. The common types of plants utilised are Road Rollers, Tractors, Concrete mixers, Tar Boilers, etc. From the details of utilisation of the plants furnished by the Ministry in respect of 14 Divisions, the Committee observe that the plants are not fully utilised, as illustrated by some typical examples below:

*(Figures are furnished only for 14 Divisions as against 68 Divisions that existed)*

	1954-55		1955-56		1956-57	
	Number in use	Average number of days	Number in use	Average number of days	Number in use	Average number of days
Road Rollers	35	81	32	69	33	41
Concrete Mixers	21	10	20	7	21	8
Tractors	8	129	8	118	8	94

It is observed that in several cases they lie idle to a considerable extent, for example, 5 Road Rollers and 12 Concrete Mixers were not used at all while 1 Road Roller, 2 tractors and 5 Concrete Mixers were used for less than 10 days in 1956-57. The Committee were informed that since the war, the contractors were encouraged to provide their own mechanical devices. They also learnt that there was a scheme to assist both the C.P.W.D. and the State Governments by making available tools and plant, subject to the maintenance of operational reserves. *The Committee desire that the question of rendering assistance to the people in the constructional and other activities which are springing up all over the country by loaning to local*

*authorities and other popular bodies and even operating equipments like tractors, bull dozers etc., should be examined. They feel that if it were done it would yield the twin benefits of utilisation of the equipment for development work and also of providing a means for emotional integration of the Army with the people.*

**(e) Stocks**

157. The Committee notice that out of the total stocks (excluding reserves) held in the Engineer Stores Depots and Parks as on 1.4.57, the annual issues amount to less than a fourth. *The Committee have in para 105 of their Fifty-Sixth Report recommended the appointment of a Stores Inquiry Committee to examine various problems pertaining to Defence Stores. They would suggest that the Stores requirements etc. of the M.E.S. should also be brought within the scope of that enquiry.*

## VIII

### A CIVILIAN WORKS ORGANISATION

#### (a) M.E.S. as an Inter-Service Organisation

158. The Committee have, earlier in this Report, mentioned that whereas the Corps of Engineers function in the Operational and line of communications areas, the M.E.S. undertake works services in peace areas. They have also pointed out that while the subordinate staff in the M.E.S. is also entirely civilian, about 30 per cent of the posts of officers are held by military officers drawn from the Corps of Engineers and that the higher principal posts are exclusively held by military officers. They have also pointed out that the M.E.S. cater to the requirements of all the three armed services as well as the Ordnance Factories.

159. They understood that Navy and Air Force represented before the M.E.S. Review Committee for being provided with separate Engineer Services. It was argued on behalf of the Air Force that aviation engineering was quite different and therefore, there should be a separate cadre of engineers who would specialise on works relating to air fields, hangars, control towers etc. They had suggested that the engineer officers from the Air Force should wear Air Force uniform right from the very beginning, that is, they should be commissioned in the Air Force, so that they could derive adequate knowledge of the Air Force and its requirements. The M.E.S. Review Committee however, found that a separate independent organisation to cater for the Navy, Air Force and Ordnance Factories would not be justified at the moment. They however, recommended that there should be separate Chief Engineers for the Navy and the Air Force.

160. *The Committee do not feel happy about the tendency to demand separation of what could possibly remain as a common Inter-Service Organisation, catering to the needs of all the armed forces. They would rather desire that as many common activities and Service in the Defence Force as possible, should be integrated and brought under Inter-Service Organisation. The Committee would recommend in this context that the inter-service character of the M.E.S. Organisation should be carefully preserved.*

#### (b) M. E. S. and Corps of Engineers

161. The Committee find that even though for all practical purposes the M.E.S. work as an inter-service organisation, it is controlled by the Engineer-in-Chief who is subordinate to the Chief of Army Staff. The Committee have considered the question whether the works services at present performed by the M.E.S. could be done by a purely inter-service organisation. For this purpose they enquired



ed into the possibility of separating the M.E.S. from the engineer troops. The Engineer-in-Chief with whom the matter was discussed did not favour it on the following grounds:—

- (i) During peace and war, the integrated assistance of both the Works Services and the Engineer troops is required for rendering Engineer assistance to the Defence Services.
- (ii) Even in U.S.A. and U.K. the Works Services are under the E-in-C and form an integral part of their functions.
- (iii) The Senior Engineer Officers are the engineer advisers to the local Commander at all formations Headquarters and are required to render assistance in the engineer planning required for internal security and essential services.
- (iv) During operations the M.E.S. would be required to assist in the restoration of Civil Communications and in the general restoration of the situation to normalcy and thus there is the need to employ military trained personnel in the M.E.S.
- (v) Separation would inevitably lead to duplication of the resources e.g. equipment, stores and plant.
- (vi) Works experience is vital to the efficiency of the Military Engineer Officers in war which is provided by the M.E.S. and is not otherwise available to Engineer Units during peace time.

162. After careful consideration, the Committee feel that even though, as at present organised, the Military Engineer Services form an integral part of the military organisation, because the E-in-C and the Chief Engineers are responsible for the control and administration of the M. E. S. formation simultaneously with those of the Engineer Units, functionally, they could be separated into two distinct organisations. The duties of the M. E. S. are well defined and relate mainly to construction and maintenance of various types of works. The Committee would point out that most of the time the M.E.S. function in peace areas and do work similar to those done by the C. P. W. D. and other Works Organisations. As will be evident from the foregoing chapters, most of the problems faced by them are problems of peace time organisations and do not require handling by military officers.

163. As regards the utilisation of the M.E.S. during emergencies, the Committee would point out that during the last war a number of civilian officers were recruited on special contracts which did not include a field service liability. Recently the Defence Services (Field Service Liability) Rules, 1957 have provided that all gazetted officers and other personnel recruited after 9th March, 1957, in categories mentioned in Schedule I of the Rules would become subject to field service liability. The Com-

mittee would point out that the fact that civilian officers were recruited during the war without field service liability shows that even during a war the M.E.S. need not get militarised. On the other hand, the fact that civilian officers recruited hereafter would be subject to field service liability would provide a certain number of officers who could work along with the Engineer Units during emergencies.

As regards the duplication of the resources and equipment, the Committee would point out that even now the operational equipment required by the Engineer Troops is earmarked separately and is not normally used by the M.E.S.

### (c) A Civilian Organisation

164. *In view of these considerations; the Committee feel that there can be no insuperable objection to making the M.E.S. Organisation completely civilian and constituting it as an inter-service organisation under a civilian head to work under the Ministry of Defence. In order to provide expenditure in construction work during peace time to some officers of the Engineer Corps, officers should be posted on deputation to the civilian organisation just as it was suggested by the M.E.S. Review Committee to post a few officers to the C.P.W.D. and other works organisations.*

165. The Committee understand that in the U. K. a Committee under the Chairmanship of Lord Weeks examined a similar question. They recommended a new civilian works organisation combining technical administration and financial responsibility for planning, execution and control of works services to be headed jointly by a Director General of Works and an Assistant Under Secretary of State who would be responsible to the Quarter-Master General and to the Permanent Under Secretary of State. The Committee learn that the U. K. Government have accepted the Report. *Thy would suggest that this Report should be studied carefully and the feasibility of converting the M.E.S. into a civilian works organisation of an Inter-Service character should be very carefully examined.*

## IX

### MILITARY ENGINEERS FOR CIVIL PROJECTS

#### Aid to Civil from Corps of Engineers

166. The Committee have also considered the question of how far the Corps of Engineers could be of help in civil construction works during peace time. They understand that the Corps of Engineers have already carried out important civil works like construction of roads, bridges and air fields in Nepal and NEFA. In addition, they have assisted in various civil projects such as Maithon project, Tungabhadra Project, the Damodar Valley Project, Assam rail and road link etc. The Committee learn that it is not practicable at present to extend the scope of the activities of the Engineer Corps in performing civil tasks. It is also understood that the present force is not sufficient to be engaged on big projects and also that it will not be advisable to use the equipment to any large extent on such works, since they would be required for emergencies and replacement would be difficult.

167. The Committee understood that a proposal was put up during 1952 by the Engineer-in-Chief to the Ministry of Defence recommending the formation of a General Reserve Engineer Force comprising of all ranks, which would be intended for employment on civil works. The scheme was, however, deferred due to financial reasons. One of the difficulties was said to be the higher cost of works done by such a force and the uncertainty whether the force could be put to economic use continuously.

168. The Committee, however, feel that this matter should be considered from two aspects. Firstly, there is a need to bring about a psychological integration between the people and the fighting forces and make them feel partners in the dual tasks of national security and national development. *While the Committee are glad to note that Engineer Units and other wings of the armed forces have come to the aid of the civil population in times of emergencies, they would suggest that there should be an arrangement by which the Army would be able to participate in a regular and continuous manner in nation building activities. From this point of view, it would be advantageous if Engineer Units undertake systematically the execution of works, for which they are fitted and which otherwise are executed by civil agencies. The Committee feel that if this idea is accepted, details could be worked out and the question of costs could be considered in a more realistic manner.*

169. The other aspect is the need for continuous training of the Engineer Units during peace time and the necessity of building up

a reserve and keeping them fully engaged. This object would be served by the proposal mentioned above. *Considered from this point of view, it may be possible for the concerned department to bear the cost of a work which it would otherwise meet if a civil agency were to do the work and for the Defence estimates to bear only the extra cost which might be considered as due to the maintenance of an extra reserve. The Committee would, therefore, suggest that this matter should be given careful consideration.*

170. In this connection, the Committee would point out that the Corps of Engineers in the U.S.A. apart from its primary role as a combatant arm and a technical service has as one of its inherent functions the carrying out of congressional programmes for flood control and navigation improvement and also renders to other agencies and departments of the Federal Government such engineering service as may be directed or agreed upon by legislation, directive or order, and that almost all Army logistic functions and major lines of communications in World War II were organised and commanded by Engineer Officers with civil works experience.

## **X**

### **MISCELLANEOUS**

#### **(a) Research and Co-ordination**

171. The Committee understand that the College of Military Engineering, Kirkee carries out a constant study of engineering practice and research with a view to their application to the special needs of the Corps of Engineers and Military Engineer Services. They are also informed that liaison is maintained by the E-in-C with other Ministries of the Government, professional bodies and institutes and various committees set up from time to time. It is also understood that some research is conducted by the M.E.S. on special problems. For instance, research was conducted at Ambala in the construction of temporary huts with a view to finding out cheaper alternative to tented accommodation. A special staff in the Planning and Designs Section of the E-in-C's Office is said to study the latest developments in the field of engineering with a view to including modern ideas in works schemes.

*The Committee would suggest in this connection that the Engineer Officers in the various Commands should be asked to collect during the course of their work problems requiring research and send them up to the Command. In suggesting the problems, selection should be made not only from those that cause difficulties in actual work, but also those that suggest themselves for improvement of technique. The Committee would suggest that these problems should be sorted out by the Commands and should be sent up to the E-in-C's office with suggestions. In that office a record should be kept of all the problems that have been suggested and action should be taken by entrusting reasearch on them to various agencies indicating the priorities. Those that are allied to the problems already under study in other research organisations like the Central Building Research Institute, Roorkee, the College of Military Engineering, Kirkee, the Central Road Research Institute, Delhi or the National Buildings Organisation, should be entrusted to the institution concerned. Other problems similar to those on which a Unit of the M.E.S. is already engaged should be assigned to them. Problems which have a bearing on the locale where they arise should be entrusted to a formation working there. The Committee would suggest that a system of co-ordination should be maintained between the work done at various places and the results communicated widely among all the Engineers.*

#### **(b) Guide to Efficiency and Handbook**

172. The Committee find that instructions and regulations on the correct procedure to be followed in respect of the work

of the Engineers and other officers are spread out in many documents rendering it difficult for an officer to keep himself fully conversant with them. *The Committee consider it desirable that a 'Guide to Efficiency' containing a digest of all important instructions and previous decisions should be prepared and periodically revised for the convenience of the officers so that they might not lose sight of important matters.*

*The Committee also recommend the publication of an Engineers' handbook showing problems of an unusual nature which arise in the M.E.S. during the execution of works and the manner in which such problems are solved.*

NEW DELHI;  
*The 23rd April, 1958.*

BALVANTRAY G. MEHTA,  
*Chairman,  
Estimates Committee.*

## **APPENDIX I**

*(Vide para No. 5)*

### **DUTIES AND RESPONSIBILITIES OF THE E-IN-C, C.E., C.W.E. AND G.E.**

#### *Duties and Responsibilities of the Engineer-in-Chief*

1. The Engineer-in-Chief is the Head of the Corps of Engineers and of the Military Engineer Services. He is the Head of a Branch of Army Headquarters.

2. He is the Technical Adviser on all Engineer matters to the Chief of the Army Staff and the PSOs. He takes the orders of the Government of India and the Chief of the Army Staff through :

(a) The CGS on the sitting, construction of fortifications defences and strategic roads and railways ;

(b) the QMG on the policy, finance and execution of all Engineer works and Services relating to the Army.

3. He is the Technical Adviser to the Ministry of Defence on all works and Engineer services relating to Ordnance Factories and such projects as are directly controlled by the Ministry of Defence, and takes the orders of the Government of India through the Ministry on these matters.

4. He is the Technical Adviser to the Chief of the Naval Staff on all works and Engineer Services relating to the Navy and takes the orders of the Government of India and the Chief of the Naval Staff.

5. He is the Technical Adviser to the Chief of the Air Staff on all works and Engineer Services relating to the Air Force and takes the orders of the Government of India and the Chief of the Air Staff on these matters.

6. The E-in-C is responsible for the Technical Training of all Engineer Units and Personnel through Chief Engineers in Commands. He advised the General Staff on the engineer aspects of GS policy, operational planning and intelligence, and on the organisation, training, allocation and employment of Engineer units and on the provision and allocation of Engineer resources. He is responsible under the General Staff for the organisation and training of Bomb Disposal Units.

7. He advises the QMG on planning, intelligence, organisation, operation and development of Transportation, Agencies, Railways, Ports and Inland Water Transport and is responsible for liaison with the Railway Board and Ministry of Transport on matters connected with transportation.

8. He is responsible to the CGS and the QMG for the procurement, holding and distribution of "Engineer Stores (including Transportation Stores) of Engineer Supply".

9. He advises the MGO on the research, design and development of Engineer equipment of Ordnance origin, demolition explosives, mines and mine detection equipment.

10. He is responsible to see that constant study of engineering practice and research with a view to their application to the special needs of the Corps of Engineers and the Military Engineer Services is carried out.

11. He is responsible for liaison with other Ministries of the Government of India through the Ministry of Defence and with Civil Engineer professional bodies on engineering.

12. He is vested with full financial powers for technical sanction projects, acceptance of contracts, and purchase of stores.

#### *Duties and Responsibilities of the Chief Engineer*

1. (a) He is the Engineer Adviser to Army Commander.

(b) The Chief Engineer is responsible for the technical training of Engineer Units in his Command and their fitness for war.

2. He is responsible for administration of all MES Formations and Engineer units in his Command.

3. He has also the overall responsibility for all works and maintenance services in his Command for the Army, Air Force and Navy and for work services for Ordnance Factories.

4. He takes steps to ensure that all concerned observe:

(a) the technical instructions for MES ;

(b) the prescribed procedure leading to the placing of contracts and payment of bills ; and

(c) the instructions for the keeping of accounts and preservation and maintenance up to date of plans and records.

5. He is vested with powers to accord technical sanction to estimates designs and specifications, for projects up to Rs. 10 lakhs.

6. He has full powers for acceptance of contracts.

7. He carries out from time to time inspection of works in progress to ensure that the work is being executed in accordance with the approved designs and specifications, that, supervision is efficiently directed, and that work is proceeding expeditiously.

8. He also carries out administrative inspections to ensure:

(a) that his subordinate officers are allotted sufficiently responsible duties to call forth their initiative, and to afford them due training and experience in the execution and control of engineer services ;

(b) that the subordinate staff is distributed and employed economically ;

(c) that the accounts, plans and records are kept up to date in accordance with rules ; and

(d) that stores accounting and stock taking are up to date.



9. He is responsible for progressing of works and E/M Services in his Command.

10. Through a Stock Taking Team, he ensures that stocks are verified regularly, and discrepancies regularised.

11. He prepares Command Schedule of Demands for funds, annually.

To assist the Chief Engineer in the discharge of his functions Staff Officers, Surveyors of Works and drawing staff are posted to him.

#### *Duties and Responsibilities of the Commander Works Engineers*

1. He is the Engineer Adviser to the Area Commander, and local Heads of Services.

2. He is responsible :

(a) that the funds allotted for engineer services under his control are administered efficiently and economically ;

(b) for the economic operation of engineer installations under his control ;

(c) for the maintenance and control of Government property on his charge ; and

(d) for the due observance of technical regulations.

3. He is also responsible for the control and progressing of all works in his area.

4. He is specially responsible to prepare and submit schemes designed to reduce maintenance costs.

5. He is also responsible that the military personnel under his command employed on works services are given adequate opportunities for maintaining their military efficiency.

6. He is responsible that each officer is given duties suitable to his experience and seniority.

7. He carries out inspections of works in progress and administrative inspections of subordinate offices.

8. In addition, he carries out annual inspection of Military Farms and Remounts Buildings and quarterly inspection of Landing grounds.

9. He arranges for measurements of important Works.

10. He administers MES personnel posted to him.

11. He personally attends reces for important projects.

12. He prepares Schedule of Demands for his area.

13. He is vested with financial powers for acceptance of contracts, for technical sanction to estimates and designs up to Rs. 1 lakh. This has been temporarily enhanced to Rs. 2.5 lakhs.

***Duties and Responsibilities of the Garrison Engineer:***

1. A Garrison Engineer of a Division is the MES Executive Officer.
2. He is the Engineer Adviser to the sub Area/Station Commander and Local Heads of Services.
3. He is responsible for :
  - (a) the efficient execution of all new works including the supervision of contractor's works;
  - (b) the maintenance in proper repair and working order of all buildings installations, furniture, machinery, roads and the land on his charge;
  - (c) the proper and economic expenditure of the funds allotted to him by CWE;
  - (d) the administration of all personnel employed under him;
  - (e) the maintenance of construction accounts for all engineer services in his area;
  - (f) quarterly inspection in company with units representatives of all Military buildings, fixtures and furniture with a view to carry out necessary repairs and recovering damages attributable to occupants;
  - (g) taking and handing over buildings on relief of units;
  - (h) observing the procedure prescribed for designs, plans, estimates and measurements, keeping of plans, records, and checking and passing of contractors' bills;
  - (i) ensuring that no departure from regulations, approved designs and specifications or the order of superior authority is permitted without the approval of the competent authority;
  - (j) reporting promptly to superior authorities important defects, serious accidents, unusual occurrences and irregularities; and
  - (k) the safe custody of cash.
4. He maintains Divisional stock for stores for minor works and maintenance ; and is responsible for maintenance of stores accounts and stock taking, and to see that unnecessary accumulation of stores does not take place.
5. He is responsible for revenue recoveries.
6. He is empowered, in cases of imminent danger to Military Buildings or of breakdown of installation, to take steps to protect Government property or inhabitants to ensure supply being maintained as far as possible ; but he should report the facts to CWE, his Station Commander, and the CDA, stating the liability he is incurring.
7. He is an *ex-officio* member of the Cantonment Board and also their Engineer Adviser.
8. He provides ground data for the preparation of estimates for projects.
9. He checks personally a proportion of all measurements for works.

10. He maintains Register of Buildings, Periodical Services, Measurement Books, Records Plans and all furniture and Store records.

11. He is responsible for the efficient and economical operation of all engineer installations in his area.

12. He submits monthly expenditure returns to CWE.

13. He is vested with powers for technical sanctions and acceptance of contracts up to Rs. 40,000/-. This has been temporarily enhanced to Rs. 1,00,000/-.

## **APPENDIX II**

*(Vide Para No. 8)*

### **FUNCTIONS OF THE M. E. S.**

**In general, the M.E.S. are responsible for the following:**

- (a) All Capital Works Services for the Army, Navy, Air Force and Ordnance Factories including provisions of buildings, and Defence Works, together with all accessory services such as Roads, Electrical & Mechanical Services, Water Supply drainage, furniture and internal fixtures.**
- (b) Maintenance Services i.e. the necessary repairs and up-keep of the Works referred to in (a) above.**
- (c) The execution of Deposit Works on behalf of Cantt. Boards and other public bodies or private persons, when approved by the competent authority.**
- (d) Maintenance and operation of Installations in connection with supply of electricity, water, refrigeration, ice and sewage disposal.**
- (e) Recovery of rent for accommodation and charges for electricity, water and furniture from all persons occupying Defence Services buildings who are not entitled to free accommodation and services.**
- (f) Procurement and holding of engineer stores for all Engineer Works and Reserves.**
- (g) Payment to contractors for works carried out and to suppliers for stores supplied ; and other charges such as bills for electric energy obtained from Municipalities, Companies, or other bodies.**
- (h) Assistance in the execution of large Civil Works of National Importance, (e.g. Nepal and NEFA projects).**
- (i) Lastly, aid to Civil for the maintenance of essential services in the event of internal emergency.**

# APPENDIX III

(Vide Para No. 13)

Statement showing original budget provision and actual expenditure

(Figures are in lakhs of rupees)

Head of account	1952-53		1953-54		1954-55		1955-56		1956-57	
	Original provision expdr.	Actual expdr.	Original provision expdr.	Actual expdr.	Original provision expdr.	Actual expdr.	Original provision expdr.	Actual expdr.	Original provision expdr.	Actual expdr.
I	2	3	4	5	6	7	8	9	10	11
<b>Major Head 58—Army</b>										
Main Head 3M—Pay allowances of civilians employed with (or for) the Army MES.	245.00	219.20	224.00	231.48	230.00	240.06	240.00	248.33	255.40	263.69
MAIN HEAD 4—TA & outstation allowances and miscellaneous	30.20	38.72	34.50	38.72	35.95	36.75	34.20	35.95	38.40	39.05
MAIN HEAD 7—Expenditure on works (other than capital projects), Maintenance, etc.	1032.40	1061.51	1098.90	1053.42	1051.94	969.78	1052.58	892.82	955.90	922.57
Total of Major Head 58	1307.60	1319.43	1357.40	1323.62	1317.89	1246.59	1326.78	1177.10	1249.70	1225.31

*Major Head 59—Navy*

Sub Head F.—Cost of works  
(other than capital projects),  
Maintenance, etc. . . .

39.35 38.21 42.53 36.76 48.27 37.13 42.30 43.00 51.43 46.87

*Major Head 60—Air Force*

Sub Head F.—Cost of Works  
(other than capital projects),  
Maintenance, etc. . . .

124.20 130.83 142.92 117.87 123.64 117.99 119.08 128.41 141.47 148.18

*Major Head 86*

Capital Projects.—ARMY.  
(including NDA)

390.00 353.18 450.00 365.11 443.00 353.94 400.00 295.91 425.00 365.84

NAVY . .

255.00 139.24 230.00 121.19 278.00 177.31 285.00 198.15 400.00 280.42

AIR FORCE .

238.89 182.49 250.00 162.49 250.00 200.81 290.36 239.56 375.00 375.00

FACTORIES.

243.00 93.71 236.00 144.10 163.56 123.67 155.00 100.32 140.00 87.04

Total of Major Head 86

1126.89 768.62 1166.00 792.89 1134.56 855.73 1130.36 833.94 1340.00 1108.30

\*Note: Accounts for 1956-57 not yet finally closed. The figures indicate the anticipated final expenditure.

# APPENDIX

Vide para

Statement showing progress of

MONTHLY EXPENDITURE IN

Head of account	Apr. 52	May 52	Jun. 52	Jul. 52
<b>Major Head 58—Army</b>				
<b>Main Head 7.</b>				
Sub Head A—Works . . . . .	0.40	1.43	2.96	3.98
Sub Head B—Maintenance, Buildings, Roads, Furniture, etc. . . . .	12.95	22.83	26.23	30.06
Sub Head C—Maintenance and Operation of Installations . . . . .	5.51	8.19	11.13	13.22
Sub Head D—General Charges (MES portion)	3.44	4.86	4.18	4.99
Sub Head E—Tools, Plant and Machinery (Nett)	1.15	1.81	4.76	2.27
Sub Head F—Stores . . . . .	—4.77	8.24	—7.35	8.60
<b>Main Head 3.</b>				
Sub Head M—Civilian Establishment . . .	21.29	21.29	23.27	19.18
<b>Main Head 4.</b>				
Sub Head A—TA and outstation Allowances .	0.72	0.92	1.04	1.17
Sub Head C—Miscellaneous Expenses . . .	0.60	0.56	0.57	0.72
<b>Major Head 59—Navy</b>				
Sub Head F—Cost of works (other than capital projects), Maintenance, etc. . . . .	1.19	1.70	1.77	2.33
<b>Major Head 60—Air Force</b>				
Sub Head F—Cost of works (other than capital projects), Maintenance, etc. . . . .	2.88	7.02	6.19	9.16
<b>Major Head 86 (Capital Works)</b>				
Sub Head A—Army (excluding Factories) . .	12.38	10.18	11.91	20.93
Factories . . . . .	1.77	5.90	8.77	11.92
Navy . . . . .	0.89	1.85	2.87	1.91
Air Force . . . . .	4.51	10.56	11.66	17.77

## IV

No. 17)

monthly expenditure during 1952-53 to 1956-57

THE MBS DURING THE YEAR 1952-53

(Figures are in lakhs of rupees)

Aug. 52	Sep. 52	Oct. 52	Nov. 52	Dec. 52	Jan. 53	Feb. 53	Mar. 53	Mar. 53	
							(Prely)	(Final)	Total
								& Supply.	
6.00	10.10	9.15	7.03	8.45	13.31	13.90	31.06	11.11	118
33.10	33.60	33.35	37.21	38.02	40.35	44.83	104.52	37.57	491
11.60	15.62	12.93	17.26	11.81	17.16	19.19	29.79	13.06	186
5.96	4.86	5.16	6.18	6.13	6.57	7.15	7.88	21.17	88
8.91	3.30	1.12	2.82	3.46	13.53	3.39	21.95	15.22	83
8.86	5.58	6.10	21.06	1.95	9.30	14.45	7.63	22.58	92
16.94	21.54	16.76	14.16	20.18	15.94	14.42	—18.94	4.71	219
1.24	1.49	1.30	1.59	2.04	1.45	1.74	1.63	1.16	17
0.53	1.01	1.10	0.95	0.66	0.87	1.69	2.62	9.37	21
2.75	1.18	2.28	3.15	2.31	3.03	5.09	9.58	3.85	38
5.07	7.79	7.41	10.39	10.23	11.69	12.4	22.56	19.81	130
19.30	21.39	19.53	29.36	45.98	39.43	29.41	53.22	40.16	355
7.01	12.32	8.73	13.40	13.16	16.25	11.02	34.86	..	144
1.18	4.16	4.62	3.56	5.34	4.89	7.57	46.64	53.76	139
13.39	11.32	10.16	11.11	16.90	12.05	23.70	20.56	18.80	182



## MONTHLY EXPENDITURE TO

Head of account	Apr 53	May 53	Jun 53	Jul 53
<b>Major Head 58 Army</b>				
<b>Main Head 7</b>				
Sub Head A—Works . . . . .	0·24	0·29	1·99	1·85
Sub Head B—Maintenance, Buildings, Roads, Furniture etc. . . . .	16·11	21·34	21·06	29·05
Sub Head C—Maintenance and Operation of Installations . . . . .	6·94	9·87	9·66	13·98
Sub Head D—General Charges (MES portion) . . . . .	3·70	5·49	3·84	4·60
Sub Head E—Tools, Plant & Machy (Nett) . . . . .	1·17	2·30	3·78	4·48
Sub Head F—Stores . . . . .	3·86	0·06 (—)	1·32	8·45
<b>Main Head 3</b>				
Sub Head M—Civilian Establishment . . . . .	21·40	20·99	22·62	20·25
<b>Main Head 4</b>				
Sub Head A—TA and Out-station allowances . . . . .	0·82	1·03	0·98	1·29
Sub Head C—Miscellaneous Expenses . . . . .	0·68	0·52	0·58	0·79
<b>Major Head 59—Navy</b>				
Sub Head F—Cost of works (other than capital projects), Maintenance, etc. . . . .	1·06	1·68	1·97	2·01
<b>Major Head 60—Air Force</b>				
Sub Head F—Cost of works (other than capital projects), Maintenance, etc. . . . .	5·89	4·45	6·52	5·59
<b>Major Head 86 (Capital Works)</b>				
Sub Head A—Army (excluding Factories) . . . . .	8·36	14·19	19·55	18·07
Factories . . . . .	2·74	7·17	10·64	8·18
Navy . . . . .	2·26	4·14	6·77	11·93
Air Force . . . . .	5·63	5·25	11·21	6·53

## THE SUM DURING THE YEAR 1953-54

(Figures are in lakhs of rupees)

Aug 53	Sep 53	Oct 53	Nov 53	Dec 53	Jan 54	Feb 54	Mar 54 (Prely)	Mar 54 (Final & Supply)	Total
2.94	4.19	4.91	7.82	8.20	9.18	17.03	35.09	25.92	120.25
29.07	33.74	27.52	37.63	40.71	42.18	65.72	120.44	38.79	523.36
15.95	18.88	10.68	18.31	19.76	16.41	17.59	32.20	10.48	200.71
5.34	4.49	4.49	5.82	8.22	6.80	5.91	7.92	9.65	76.27
4.59	7.37	6.24	2.80	6.52	4.17	10.38	10.03	17.60	84.43
(-)-0.74	10.11	31.61	1.46	2.81	0.59	(-)-7.48	(-)-5.25	4.28	48.40
19.55	20.66	17.80	18.21	21.71	19.30	16.15	17.84	(-)-5.05	231.48
1.25	1.31	1.35	1.54	1.37	1.32	1.64	2.05	1.43	17.38
1.39	1.07	0.85	1.01	0.82	1.28	1.46	3.71	7.18	21.34
2.02	2.63	2.08	2.90	3.80	3.07	4.25	9.29	..	36.7
7.71	6.48	11.70	9.75	7.70	8.60	12.18	19.54	11.76	117.87
16.59	19.20	18.23	32.87	25.85	27.17	34.75	93.38	36.90	365.11
7.97	5.61	9.93	12.51	10.52	12.66	16.10	33.60	..	137.63
7.61	8.06	7.71	12.06	8.81	5.61	11.33	22.79	12.10	121.18
0.87	8.90	8.70	11.65	14.69	14.95	17.53	25.81	20.77	162.49

## MONTHLY EXPENDITURE IN THE MES

Head of account	April 1954	May 1954	June 1954	July 1954
<b>Major Head 58—Army</b>				
<b>Main Head 7—</b>				
Sub Head A—Works . . . . .	0.54	1.42	2.82	3.46
Sub Head B—Maintenance, Buildings, Roads, Furniture etc. . . . .	15.03	25.75	25.58	26.03
Sub Head C—Maintenance and Operation of Installations . . . . .	6.95	10.16	11.43	12.11
Sub Head D—General Charges (MES portion) .	3.44	4.65	4.23	5.61
Sub Head E—Tools, Plant and Machinery (Nett)	1.23	1.96	6.22	2.63
Sub Head F—Stores . . . . .	3.97	0.96	0.25	8.65
<b>Main Head 3—</b>				
Sub Head M—Civilian Establishment . . .	22.41	22.88	24.37	20.93
<b>Main Head 4—</b>				
Sub Head A—TA and outstation allowances .	0.92	1.23	1.42	1.62
Sub Head C—Miscellaneous Expenses . . .	0.78	0.78	0.56	10.83
<b>Major Head 59—Navy—</b>				
Sub Head F—Cost of works (other than capital projects), Maintenance, etc. . . . .	1.76	2.53	1.96	3.25
<b>Major Head 60—Air Force—</b>				
Sub Head F—Cost of works (other than capital projects), Maintenance, etc. . . . .	5.17	3.77	4.89	6.45
<b>Major Head 86—(Capital Works)—</b>				
Sub Head A—Army (excluding Factories) .	9.65	15.95	16.66	14.56
Factories . . . . .	5.29	7.06	8.19	6.25
Navy . . . . .	2.15	9.86	9.37	9.84
Air Force . . . . .	8.88	7.41	13.90	11.93

DURING THE YEAR 1954-55.

(Figures are in lakhs of rupees)

August 1954	Septem- ber 1954	Octo- ber 1954	Novem- ber 1954	Decem- ber 1954	Janu- ary 1955	Febru- ary 1955	March 1955 (Prely)	March 1955 (Final and Supply)	Total
6.27	5.30	6.07	7.66	6.76	9.80	11.75	31.68	16.17	109.70
31.94	38.50	39.30	35.91	40.04	40.18	44.38	113.19	34.68	505.51
13.19	14.44	13.49	18.16	16.79	19.31	22.32	30.44	12.81	201.60
4.83	5.10	4.75	5.01	8.40	5.89	21.30	5.85	7.00	86.06
13.41	5.25	5.21	5.76	9.30	13.35	8.28	15.38	6.58	94.56
(—)13.83	16.07	1.65	0.65	(—)7.54	(—)8.93	1.34	(—)7.88	(—)23.01	(—)27.65
18.40	21.58	19.48	17.54	21.25	19.65	18.45	20.61	(—)7.51	240.06
1.41	1.66	1.61	1.38	1.54	1.61	2.18	1.67	1.21	19.46
1.83	2.08	1.36	0.91	2.30	0.82	0.29	1.56	5.35	17.29
2.68	2.83	3.08	2.40	3.34	3.13	3.77	6.65	..	37.13
6.63	8.30	8.24	12.98	11.67	9.31	14.96	13.27	12.34	117.99
19.91	32.30	26.79	32.30	20.19	35.55	28.65	77.20	24.23	353.94
4.89	6.24	9.02	9.30	9.89	8.86	17.27	30.22	..	122.48
6.80	7.35	12.62	7.61	13.01	11.93	15.35	27.39	44.07	177.35
11.86	15.46	10.83	8.63	15.96	19.25	20.71	32.99	23.00	200.81

## MONTHLY EXPENDITURE IN THE MES

Head of account	April 1955	May 1955	June 1955	July 1955
<b>Major Head 58—Army—</b>				
<b>Minor Head 7—</b>				
Sub Head A—Works . . . . .	0·29	0·82	2·34	3·65
Sub Head B—Maintenance, Buildings, Roads, Furniture etc. . . . .	16·54	21·00	20·24	26·83
Sub Head C—Maintenance and operation of Installations . . . . .	7·37	9·12	12·13	15·26
Sub Head D—General Charges (MES portion) .	3·22	4·15	3·93	4·23
Sub Head E—Tools, Plant and Machinery (Nett) . . . . .	1·70	1·64	3·08	2·90
Sub Head F—Stores . . . . .	3·06	7·26 (—)	9·82	4·29
<b>Main Head 3—</b>				
Sub Head M—Civilian Establishment . . .	23·08	17·70	24·81	21·20
<b>Main Head 4—</b>				
Sub Head A—TA and outstation allowances .	1·03	1·14	1·30	1·29
Sub Head C—Miscellaneous Expenses . . .	0·89	0·75	0·78	0·56
<b>Major Head 59—Navy—</b>				
Sub Head F—Cost of works (other than capital projects), Maintenance, etc. . . . .	1·36	0·85	2·53	3·54
<b>Major Head 60—Air Force—</b>				
Sub Head F—Cost of works (other than capital projects), Maintenance etc. . . . .	3·62	5·26	6·00	6·65
<b>Major Head 86—(Capital Works)—</b>				
Sub Head A—Army (excluding Factories) .	3·28	8·62	11·88	16·68
Factories . . . . .	1·59	4·66	3·76	4·99
Navy . . . . .	4·23	6·02	7·37	8·89
Air Force . . . . .	4·03	9·53	12·41	11·26

## DURING THE YEAR 1955-56

(Figures are in lakhs of rupees)

August 1955	Septem- ber 1955	Octo- ber 1955	Novem- ber 1955	Decem- ber 1955	Janu- ary 1956	Febru- ary 1956	March 1956 (Prely)	March 1956 (Final and Supply)	Total
4.60	4.50	5.91	6.13	5.43	9.71	13.51	25.83	11.05	93.77
27.34	31.66	30.48	35.31	40.39	42.40	56.21	97.26	24.51	470.17
13.05	14.47	16.39	17.70	15.95	18.44	22.89	33.97	18.81	215.55
4.86	4.13	4.81	4.48	5.13	7.70	6.61	9.30	19.76	82.11
3.04	8.65	3.77	3.32	7.99	2.76	8.79	8.85	0.81	57.30
22.51	(—)12.40	29.20	5.30	(—)9.62	(—)1.02	(—)15.02	17.66	(—)67.48	—26.08
18.01	20.49	21.35	20.86	22.54	23.63	14.74	18.05	1.87	248.33
1.54	1.38	1.46	1.47	1.48	1.57	1.62	1.79	1.46	18.53
1.07	1.00	1.73	0.41	1.11	0.83	1.22	1.97	5.10	17.42
2.48	3.02	2.88	3.33	2.05	3.25	5.95	9.25	2.51	43.00
8.33	7.20	10.70	11.14	11.56	10.92	14.65	21.94	10.34	128.48
15.00	21.48	13.80	20.53	24.77	30.27	31.44	68.74	27.42	295.98
6.74	7.93	6.32	7.26	9.50	10.04	12.37	29.14	..	104.30
19.01	7.04	9.64	19.22	20.64	18.91	23.69	39.40	14.09	198.15
15.58	12.33	13.39	19.61	22.82	40.59	24.51	30.44	23.06	239.56

## MONTHLY EXPENDITURE IN THE

Head of account	April 1956	May 1956	June 1956	July 1956
<b>Major Head 58—Army—</b>				
<b>Main Head 7—</b>				
Sub Head A—Works . . . . .	0·34	0·61	1·14	2·24
Sub Head B—Maintenance, Buildings, Roads, Furniture etc. . . . .	21·27	20·85	19·60	30·88
Sub Head C—Maintenance and operation of Installations . . . . .	7·25	10·00	10·82	13·63
Sub Head D—General Charges (MES portion)	2·97	4·21	4·59	4·03
Sub Head E—Tools, Plant and Machinery (Nett)	1·43	3·78	1·74	12·54
Sub Head F—Stores . . . . .	4·63	15·25	13·75	7·89
<b>Main Head 5—</b>				
Sub Head M—Civilian Establishment . . .	23·79	22·39	18·74	25·94
<b>Main Head 4—</b>				
Sub Head A—TA and outstation allowances .	0·97	1·08	0·87	1·53
Sub Head C—Miscellaneous Expenses . . .	0·85	0·70	0·95	0·96
<b>Major Head 59—Navy—</b>				
Sub Head F—Cost of Works (other than capital projects), Maintenance, etc. . . . .	1·33	2·51	2·16	2·13
<b>Major Head 60—Air Force—</b>				
Sub Head F—Cost of works (other than capital projects), Maintenance, etc. . . . .	4·91	4·92	5·30	7·14
<b>Major Head 86—(Capital Works)—</b>				
Sub Head A—Army (excluding Factories) .	7·60	15·31	13·00	19·48
Factories . . . . .	1·97	3·07	4·98	6·07
Navy . . . . .	3·13	19·64	21·99	15·15
Air Force . . . . .	7·09	14·28	20·23	17·27

## MES DURING THE YEAR 1956-57

(Figures are in lakhs of rupees)

August 1956	Septem- ber 1956	Octo- ber 1956	Novem- ber 1956	Decem- ber 1956	Janu- ary 1957	Febru- ary 1957	March 1957 (Prely)	March 1957 (Final and Supply)	Total
6.17	5.42	4.69	5.35	5.59	6.79	11.79	29.43	16.03	95.59
30.94	32.12	30.88	33.16	33.27	44.59	46.10	103.70	22.20	469.56
13.20	14.14	16.16	15.61	16.38	16.87	24.03	27.60	14.13	199.82
6.03	4.83	4.28	4.83	5.15	5.93	7.26	9.26	29.03	92.40
2.29	2.84	2.95	2.71	2.22	4.86	3.83	9.40	17.17	67.76
14.10	(—)8.04	10.98	5.34	0.67	9.32	(—)20.95	6.70	(—)52.20	(—)2.56
22.56	22.21	24.66	23.64	21.01	21.61	19.10	19.25	(—)2.21	263.69
1.52	1.46	1.56	1.40	1.33	1.88	1.91	1.75	1.52	18.75
1.07	(—)0.27	1.69	1.36	0.96	2.09	1.54	2.99	5.37	20.21
2.63	3.21	3.16	3.82	3.70	3.70	5.50	10.32	2.69	46.81
7.31	10.47	8.88	9.13	9.55	14.28	25.60	34.78	16.75	159.02
20.61	18.34	21.79	31.24	28.02	36.58	33.96	80.43	39.01	365.37
3.62	5.22	5.51	7.91	8.18	10.05	7.56	29.55	..	92.69
10.39	14.48	15.82	17.07	17.93	23.30	21.90	53.51	46.10	280.37
18.92	19.83	23.58	32.86	23.78	37.54	39.08	60.49	47.72	363.06



**(Vide Para 44)**

### ***Details of Volume of work done by each garrison Engineer during the last 3 years***

S. No.	Division	1954-55				1955-56				1956-57						
		Volume of work				Volume of work				Volume of work						
		No. of Sub-Dns	Original Works	Maint Serv-ces	Total	No. of Sub-Dns	Original Works	Maint Serv-ces	Total	No. of Sub-Dns	Original Works	Maint Serv-ces	Total			
1	2	3	4	5	6	7	8	9	10	11	12	13	14			
1	Ahmednagar	.	.	.	4	7.73	12.06	19.79	4	11.50	10.22	21.72	5	12.55	11.43	25.98
2	Avadi	.	.	.	6	2.80	27.17	29.97	6	10.00	30.50	40.50	6	7.21	29.90	37.11
3	Bangalore	.	.	.	7	14.53	23.48	38.01	7	13.64	22.39	36.03	7	7.25	22.12	29.37
4	Bombay	.	.	.	6	6.99	37.56	44.55	6	6.06	34.78	40.84	6	6.21	41.28	47.49
5	Cochin	.	.	.	6	86.15	15.15	101.30	3	80.61	..	80.61	3	64.25	..	64.25
6	Do. II	.	.	.	..	..	..	..	4	11.85	13.00	24.85	4	5.89	16.05	21.94
7	Dehu Road	.	.	.	4	4.82	15.27	20.09	4	3.57	17.17	20.74	4	6.72	18.77	25.49
8	Deoli	.	.	.	5	11.89	17.42	29.31	5	1.57	14.28	15.85	5	0.94	17.00	17.94

22	9	-do-	II	.	.	.	.	..	..	4	2.67	..	23.67	4	48.15	..	48.15
23	10	-do-	III	.	.	.	..	..	..	3	8.15	..	8.15	3	35.44	..	35.44
24	11	Jalahalli	.	.	.	8	16.88	24.55	41.43	7	39.30	17.66	56.96	7	20.71	17.85	38.56
25	12	Jamnagar	.	.	.	6	23.75	13.50	37.25	6	20.42	7.15	27.57	6	36.00	8.91	44.91
26	13	Jubbulpore (E)	.	.	.	3	7.50	10.37	17.87	4	17.55	9.31	26.86	4	17.23	10.95	28.18
27	14	-do-	(W)	.	.	7	9.52	18.69	28.21	8	7.44	19.48	26.92	8	7.40	19.61	27.01
28	15	Kalyan	.	.	.	5	35.04	5.15	40.19	5	33.60	4.37	37.97	5	20.54	4.54	25.08
29	16	Khamaria	.	.	.	4	29.37	8.34	37.71	4	20.00	4.62	24.62	4	13.01	3.11	16.12
30	17	Kirkee	.	.	.	7	25.62	23.44	49.06	8	20.72	23.04	43.76	8	23.62	19.95	43.57
31	18	-do-	(CME)	.	.	5	11.20	4.91	16.11	3	8.57	5.37	13.94	4	15.68	5.35	21.03
32	19	Khadakwasla (I)	.	.	.	3	20.59	1.28	21.87	3	19.16	..	19.16	3	13.76	..	13.76
33	20	-do-	(II)	.	.	3	39.84	0.22	40.06	3	40.11	..	40.11	3	15.62	..	15.62
34	21	†-do-	(III)	.	.	4	15.33	0.29	15.62	4	7.31	5.02	12.33	4	8.79	9.21	18.00
35	22	†-do-	(IV)	.	.	3	37.98	0.53	38.51	..	..	..	..	..	..	..	..
36	23	Madras	.	.	.	5	6.79	12.85	19.64	5	3.53	13.94	17.47	5	2.56	12.41	14.97
37	24	Mhow	.	.	.	5	7.34	11.58	18.92	5	11.55	10.41	21.96	5	27.63	9.61	37.24
38	25	Poona	.	.	.	5	8.39	27.08	35.47	5	7.24	27.20	34.44	6	6.09	24.46	30.55
39	26	-do-	(APW)	.	.	4	42.70	5.81	48.51	4	25.30	6.96	32.26	4	28.22	7.41	35.63
40	27	-do-	(Project)	.	.	3	11.68	..	11.68	4	16.58	..	16.58	4	19.01	0.28	19.29

† Since closed down.

1	2	3	4	5	6	7	8	9	10	11	12	13	14		
28	Pulgaon	.	.	8	15.22	34.61	49.83	6	13.73	25.95	39.68	7	4.79	16.33	21.12
29	Secunderabad	.	.	8	10.90	36.99	47.89	8	9.78	38.45	48.23	6	8.88	34.77	43.65
30	Secunderabad (Project)	.	.	.	..	..	..	..	..	..	..	3	12.46	0.07	12.53
31	Vishakhapatnam	.	.	5	23.12	16.54	39.66	5	17.04	9.62	26.66	5	11.11	9.71	20.82
32	Vishakhapatnam (BTE)	.	.	..	..	..	..	2	0.95	0.08	1.03	3	2.84	0.25	3.09
33	Wellington	.	.	6	10.19	10.27	20.46	6	14.01	9.33	23.34	6	9.98	9.71	19.69
34	Ranchi	.	.	6	4.72	15.66	20.38	5	0.98	2.10	13.08	5	2.20	10.40	12.60
35	Shillong	.	.	6	15.39	9.45	24.84	6	11.64	11.04	22.68	5	3.46	11.43	14.89
36	Dinapore	.	.	4	5.05	18.64	23.69	4	2.87	16.67	19.54	4	2.09	13.44	15.53
37	Jorhat	.	.	..	..	..	..	..	..	..	..	3	2.23	2.09	4.32
38	Calcutta.	.	.	5	8.58	25.22	33.80	5	10.37	25.21	35.58	6	16.62	27.93	44.55
39	Ishapore	.	.	6	22.79	15.78	38.57	5	11.25	17.17	28.42	5	17.47	14.86	36.33
40	Panagar	.	.	5	6.20	20.54	26.74	5	5.70	24.28	29.98	5	8.42	22.23	30.65
41	Lucknow	.	.	6	7.67	23.13	30.80	6	11.28	27.24	38.52	5	8.31	25.01	33.32
42	Lucknow (Project)	.	.	..	..	..	..	..	..	..	..	3	19.36	0.06	19.42
43	Bareilly	.	.	6	12.23	13.66	25.89	6	10.50	13.49	23.99	6	12.03	12.92	24.95
44	Kanpur	.	.	5	22.43	2.26	24.69	5	22.62	16.95	39.57	5	13.49	15.82	29.31
45	Allahabad	.	.	6	3.42	21.02	24.44	6	5.40	17.55	22.95	6	8.68	19.21	27.89
46	Jhansi	.	.	7	11.21	30.46	41.67	6	5.79	21.74	27.53	7	9.75	23.16	32.91
47	Meerut	.	.	6	17.03	21.91	38.94	6	9.68	20.63	30.31	7	8.80	24.32	33.33

48	Agra	.	.	.	.	5	3.99	17.65	21.64	5	6.80	18.13	24.93	5	6.39	19.69	26.08
49	Dehra Dun	.	.	.	.	7	9.14	29.16	38.30	7	10.24	26.16	36.40	7	12.67	27.08	39.75
50	Agra (B/R AFW)	.	.	.	.	3	36.91	4.06	40.97	5	54.36	3.23	57.59	3	19.57	3.91	23.48
51	Agra (E/M AFW)	.	.	.	.	3	22.36	5.51	27.87	3	6.20	3.62	9.82	4	7.21	4.10	11.31
52	Chakeri (AFW)	.	.	.	.	5	4.65	10.82	15.47	4	4.38	12.49	16.87	4	6.45	15.86	22.31
53	Kalaikunda (B/R AIW)	.	.	.	.	3	5.31	1.71	7.02	3	38.27	1.31	39.58	3	70.22	0.88	71.10
54	Kalaikunda (E/M AIW)	.	.	.	.	1	13.00	0.51	13.51	4	10.60	0.85	11.45	3	18.32	1.67	19.99
55	Barraekpore (AFW)	.	.	.	.	..	..	..	..	..	..	..	..	3	7.05	4.40	11.45
56	Ambala	.	.	.	.	6	38.86	30.01	68.87	7	31.90	26.68	58.58	7	15.81	22.35	38.16
57	Ambala (AFW)	.	.	.	.	..	..	..	..	..	..	..	..	4	4.59	..	4.59
58	Ambala (Project)	.	.	.	.	7	15.16	6.84	22.00	7	10.98	9.08	20.06	7	17.99	7.84	25.83
59	Amritsar	.	.	.	.	7	7.61	19.91	27.52	6	12.43	19.68	32.11	7	14.43	19.35	33.78
60	Ferozepur	.	.	.	.	6	4.00	16.48	20.48	4	7.39	13.97	21.36	4	18.63	11.95	30.58
61	Jullundur	.	.	.	.	7	17.99	15.33	33.32	6	14.53	15.23	29.76	6	39.35	14.02	53.37
62	Jaipur	.	.	.	.	10	19.00	21.93	40.93	10	11.82	24.32	36.14	10	8.95	28.34	37.29
63	Delhi (Red Fort)	.	.	.	.	7	21.99	10.99	32.98	8	41.90	18.95	60.85	5	6.98	12.64	19.62
64	Delhi (Cantt)	.	.	.	.	8	14.01	36.48	50.50	6	11.88	33.54	45.42	6	16.19	24.06	40.45
65	Delhi (Palam)	.	.	.	.	..	..	..	..	..	..	..	..	6	38.80	11.62	50.42
66	Bombay (N.W.)	.	.	.	.	6	58.21	9.28	67.47	4	30.04	6.92	36.96	5	52.82	8.54	51.36
67	Kurla	.	.	.	.	..	..	..	..	4	8.81	3.21	12.02	4	25.56	3.41	28.97
68	Karanja	.	.	.	.	..	..	..	..	3	0.59	..	0.59	3	11.43	..	11.43

# APPENDIX VI

(Vide para 58)

## METHOD OF RECRUITMENT OF CIVILIANS IN THE M.E.S. THEIR SCALES OF PAY, QUALIFICATION REQUIRED ETC.

### PART I — GAZETTED OFFICERS

Sl. No.	Category	Method of recruitment (See foot note 1)	Scale of pay	Minimum qualifications (See foot note 2)	Training	Avenues of promotions
1	2	3	4	5	6	7

### ENGINEER CADRE

1	Superintending Engineer.	By departmental promotion only.	Rs.1300-60-1660	(a) 5 years service as EE; and (b) Recognised Engineering degree or equivalent.	No special training given as only experienced and qualified engineers are considered for promotion to this grade.	Nil.
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2 Executive Engineer	By departmental promotion only.	Rs. 600—for first 6 years—40—1000-1050—1050-1100—1100-1150.	(a) 5 years service as AEE ; and (b) Recognised engineering degree or equivalent or extensive experience and uniformly good reports.	As for item 1.	S.E.
3 Assistant Engineer.	(a) Partly by Departmental promotion from Supdt. Gd. I, and partly by :	Rs. 350-350-380-380-30-590 EB-30-770-40-850.	(a) 3 years service as Superintendents grade I, and (b) Recognised engineering degree or equivalent or, in the case of Permanent or Quasi-permanent personnel, extensive experience and uniformly good reports.	On first appointment, newly recruited officers are sent to CME or the MES Procedure Course. There are following additional refresher / training courses to which officers are detailed from time to time as required.	EE/SE.
	(b) Direct recruitment. (No percentage of either is prescribed.)	Do.	Recognized engineering degree or equivalent.	1. Short CE Course. 2. Plant Instructors Course. 3. Earth Moving Plant Course. 4. Stores Course.	

1	2	3	4	5	6	7
4	Chief Surveyor of Works.	By departmental promotion only.	Rs. 1600-1000-1800	(a) 3 years service as SSW, and (b) Final Examination of the Royal Institute of Chartered Surveyors (London) or Institute of Surveyors (India) or Departmental final.	No special training given as only experienced and qualified surveyors of the MES are considered for promotion.	Nil.
5	Superintending Surveyor of Works.	By departmental promotion only.	Rs. 1300-60-1600	(a) 3 years service as SW, and (b) (as for CSW)	Do.	CSW.
6	Surveyor of Works	By departmental promotion only.	Rs. 600 for first 6 years. 40-1000-1000-1050-1050-1100-1150.	(a) 2 years service as ASW, and (b) Recognised Engineering degree, and	No special training given as only experienced and qualified surveyors of the MES are considered for promotion.	SSW/CS.

(c) Passed intermediate examination of RICS (London) or I of S (India)

OR

Passed Final Examination of RICS (London) or I of S (India).

7 Asstt. Surveyor of Works.

(a) Partly by Departmental promotion from Surveyor's Asstt. Gde. I and partly by :

(b) Direct recruitment.

(No percentage of either is prescribed).

Rs. 350-350-380-380-30-590-EB-30-770-40-850.

*Departmental promotion.*—3 years experience as Surveyor's Asstt. Gde. I, and

(a) Recognised Engineering degree or equivalent or extensive experience and uniformly good reports in the case of permanent or Quasi permanent hands.

OR

(b) Final Examination of RICS (London) or Institute of Surveyors (India).

Assistant Surveyor of Works Course at the CME Kirkee.  
SW/SSW/  
CSW



1	2	3	4	5	6	7
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*Direct recruitment.—*

Recognised engineering degree or equivalent.

ARCHITECTS CADRE

8 Chief Architect (Post not yet implemented) Departmental Promotion. Ra. 1300-60-1600 (Provisional subject to revision). (a) *Departmental promotion.*— Under consideration by UPSC) No special training given as only experienced and qualified architects are considered for this appointment. Nil.

(Direct recruitment if no suitable departmental candidate available).

(b) Direct recruitment :—

ARIBA or equivalent.

9 Senior Architect Departmental promotion (Direct recruitment if no suitable departmental candidate available.) Ra. 1300-60-1600 Do. CA when implemented.

10 Junior Architect Do. (a) 3 years service as AA, and (b) Recognised degree or diploma in Architecture. Do. SA/CA

Nil.

(a) Departmental promotion 50 %  
 Rs. 275-25-500-EB-30-800. (a) 2 years service as a Chief Draughtsman.

(b) Direct recruitment through UPSC-50 %  
 (b) Recognised degree or Diploma in Architecture.

## BARRACK AND STORES CADRE

12 Senior Barrack/ Stores Officer. By departmental promotion of Barrack/ Store Officers only. Nil, as only departmental officers with long MES experience are appointed to this post.

13 Barrack/Stores Officers By departmental promotion of Supervisor B/s Gde. I only. Nil, as only departmental Supervisors Gde. I with long MES experience are considered for these posts.

## ADMINISTRATIVE CADRE

14 Civilian Admin-Officer Gde. I. By departmental promotion Nil, only departmental officers with

1	2	3	4	5	6	7
		of Civilian Administrative Officers Gde. II only.		Administrative Officer, Gde II.	long MES experience are considered for these posts.	
15	Civilian Administrative Officer Gde. II.	By departmental promotion of Superintendents (Clerical) only.	Rs. 400-20-500	3 years service as superintendents (Clerical).	Nil, as only departmental Supdts. with long MES experience are considered for these posts.	COA/GDE I

**NOTE :—** (1) All departmental promotions are made in consultation with the UPSC. All direct recruitment is made through UPSC.

(2) The minimum qualifications shown above are still under consideration with the U.P.S.C. They are being followed in the meantime.

## PART II — SUBORDINATES

Name of post	Prescribed scales of pay	Minimum Qualifications		Training given	Avenues of promotion to higher Grade.
		Direct recruits	Departmental promotions		
1	2	3	4	5	6

Rs.

Supdt. B/R Gde. 250-15-340/15-400 plus charge allowance of Rs. 50/- when in charge of a Sub-Divn.

Recognised engineering degree.

Note:—Direct recruitment is resorted to only when suitable Departmental candidates are not available.

*For permanent and quasi permanent Supdt. B/R Gde. II—*

(a) 5 years service as Supdt. B/R Gde. II ; and

(b) Passed SDO or Supdt. B/R Gde. I examination;

or

Qualified in SDO or Supdt B/R Gde. I Course at CME Kirkee; or

Courses are held at CME Kirkee for Supdt. B/R Gde. I (Tech.) and Supdt. B/R & E/M Gde. I—(Procedure).

Eligible for promotion as Asstt. Executive Engineers.

1	2	3	4	5	6
	Rs.		Passed MES procedure Course at the CME or such other departmental examination as may be prescribed.		
			<i>For temporary employees:—</i>		
			(a) 5 years service as Supdt. B/R Gde. II; and		
			(b) Recognised overseers diploma; or		
			Passed SDO or Supdt. B/R Grade I examination.		
Supdt. B/R Gde. II.	100-8-140-10-200- EB. 10-300/-	Overseer's Diploma from recognised Engineering Institutions.	Same as for direct recruits.	Nil.	Supdt. B/R Gde. I.
Supdt. E/M Grade I	250-15-340-15-400/- plus charge allowance of Rs. 50/- when	Recognised Engineering Degree.	For permanent or Quasi permanent Supdt. E/M Gde II—	Courses are held at CME Kirkee for Promotion Supdts. B/R Gde. I as Assistant	

incharge of a Sub-Divn.

*Note:—*Direct recruitment resorted to only if suitable departmental candidates are not available.

(Tech.) and Supdts. Executive B/R & E/M Gde. I Engineers.

- (a) 5 years service as Supdt. E/M. Gde. II; and
- (b) Passed S.D.O. or Supdt. E/M. Grade I examination;

or

Qualified in MES Procedure or SDO or Supdt. E/M Gde. I Course at CME or such other departmental examination as may be prescribed.

*For temporary employees—*

- (a) 5 years service as Supdt. E/M Gde. II; and
- (b) Recognised overseas diploma;

or

Passed SDO or Supdt. E/M Grade I examination.

1	2	3	4	5	6
	Rs.				
Supdt. E/M Gde. II	100-8-140-10-200 EB/10-300/-	Diploma in E/M Engineering from recognised Engineering Institutions.	As for direct recruits.	Nil	Supdt. E/M Gde. I
Surveyors Assistant Gde. I	250-25-340-EB-15- 400/-	Recognised Engineering Degree; or Inter Exam. of Institution of RICS; London; or Inter Exam. of Institution of Surveyors (India).	For permanent and Q. permanent SA. Gde. II.— First examination of RICS, London; or First examination of Institution of Surveyors (India). For temporary employees.— (a) Recognised Overseer's Diploma; and (b) First Exam. of RICS, London or Institution of Surveyors (India); or other examination accepted by E-in-C. as equivalent.	SA Gde. I Course at CME Kirkee.	Assistant Surveyors of Works.

*Note.*—Direct recruitment is resorted to only if suitable departmental candidates are not available.

Surveyors Assistant Gde. II	100-8-140-10-200-EB-10-300.	Overseer's Diploma from recognised Institution, or First Examination of RICS London; or First Exam. of Institution of Surveyors' (India).	Same as for direct recruits.	SA Gde. II course at CME, Kirkee.	Surveyors Assistant Grade I.
Supervisor Barrack Stores Gde. I	200-15-350-EB-15-410.	No direct recruitment to this post as nature of work is such that it can be performed only by departmental employees of long experience in the Dept.	(a) Matric or equivalent; (b) 5 years experience in B/S Cadre; and (c) Passed SDO F/S or Supvr. B/S Gde. I Exam.; or Passed Supvr. B/S Gde. I Qualifying course at CMF.	Nil.	Barrack Stores Officer.
Supervisor Barrack Stores Gde. II	100-8-140-10-200	No direct recruitment made as nature of work is such that it can be performed only by departmental employees of long experience in the Department.	(a) Matric or equivalent; (b) three years experience in B/S Cadre; and (c) Passed Storekeepers' Exam.	Nil.	Supervisors Barrack Stores Gde. I.



1	2	3	4	5	6
Storekeeper Grade I	Rs. 80-5-120-EB-8-160	Graduate from recognised University.  <i>Note.</i> —Direct recruitment is resorted to only if suitable departmental candidates are not available.	(a) Matric or equivalent; (b) One year's experience in B/S Cadre; and (c) Passed Storekeepers' Examination.	Nil.	Supervisor Barrack Stores Gde. II
Storekeeper Grade II	60-3-81-EB-4-125-5-130.	Matric or equivalent.	(a) Matric or equivalent; (b) 1 year service; and (c) Passed Storekeepers' Exam.	Nil.	Storekeeper Grade I.
Chief D'man	300-20-500	No direct recruitment made normally.	(a) Matric or equivalent; and (b) (i) Passed 4th year's examination from any of the following:— (1) Sir J. J. School of Arts, Bombay. (2) Kalabhavan School, Baroda. (3) Delhi Polytechnic. (ii) Passed 6th year (Part-time) National Diploma	Nil.	Assistant Architect.

Examination in  
Architecture from  
Delhi Polytechnic,  
AND

with 3 years ex-  
perience (after pas-  
sing exam.) under  
a qualified archi-  
tect.

or

(iii) Passed Asstt. Ar-  
chitect. Exam. con-  
ducted by E.-in-C.  
in 1947.

or

(iv) At least 12 years  
total service as  
D'Man in MES  
including not less  
than 5 years as  
D'man Gde. I  
permanent.

Senior D'man 260-15-350

No direct recruitment  
made.

(a) Matric or equi-  
valent; and

Chief  
Draftsman.

(b) (i) Passed 3 years  
Architectural Cour-  
se/ Exam. from  
any of the follow-  
ing:—

(1) Sir J. J. School  
of Arts, Bombay.

(2) Kalabhavan  
School, Baroda.

6

5

4

3

2

1

Ra.

(3) Delhi Polytechnic

(4) Bengal Engineering College, Shibpur

Or

(ii) Passed 4 years Architectural course from Govt. Eng. School, Nagpur.

or

(iii) Passed National Inter Exam. (Architectural) from All India Council of Technical Education.

or

(iv) Passed departmental exam. for Senior D'man Gde. I and 7 years service as D'man including not less than 3 years as D'Man Gde. I.

D'man Gde. I 150-7-185-8-225

Senior  
Draftsman

Nil.

No direct recruitment  
made normally.

- (a) Matric or equivalent; and
- (b) Technical qualifications as for Senior D'man; and
- (c) 3 years service as D'man.

*Note.*—Direct recruitment is resorted to only if suitable departmental candidates are not available.

D'man Gde. II 100-5-125-6-155-FB-6-185.

Do.

- (a) Matric or equivalent; and

- (b) Passed 2 years Architectural course or Exam. from any of the following:—

- (1) Sir J. J. School of Arts, Bombay.
- (2) Kalabhavan School, Baroda.

- (3) Delhi Polytechnic.

- (4) Sir Jayacharajindra Occupational Institute, Bangalore.

- (5) MBE Engineering College, Jodhpur.

Course for 2nd Grade Draftsman  
Draftsman at CME, Gde. I.  
Kirkee.

1	2	3	4	5	6
			(6) Punjab Govt. School of Engr., Nilokheri.		
			(7) Training Works Centre, Arab-Ki-Sarai, Delhi.		
			(8) Institution under DGRE.		
			(9) University of Roorkee.		
			(10) (i) Higher grade certificate, Madras Govt.		
			or		
			(ii) Passed 3 years Architectural course from Govt. Engineering School, Nagpur or Delhi Polytechnic (Part time) National Diploma.		
			or		
			(iii) Passed Departmental Exam. for Junior D'man or D'man Grade II.	Course for 2nd & 3rd Grade Draftsman at CME, KIR-KEE.	D'man Gde. II.

D'man Gde. II.	Rs. 60-4-120-EB-5-150	Matric and aptitude for drawing work.	As for direct recruits. Promotions made from qualified Ferro-printers & Storemen.	
Supdt. (CI)	Rs. 250-15-400	No direct recruitment made.	Matric or equivalent and 7 years service in clerical cadre.	CAO Gde. II
Assistant in Charge.	Pay as UDC plus charge allowance of Rs. 20.	Do.	(a) Matric or equivalent; and (b) Passed UDC Examination ; and (c) 5 years experience in clerical cadre.	Supdt. (Clerical)
UDC.	Rs. 80-5-120-EB-8-200- 10/2-220.	Graduate		
	<p>Note.—Direct recruitment is resorted to only if suitable departmental candidates are not available.</p>			Assistant-in-Charge.
LDC.	Rs. 60-3-81-EB-4-125- 5-130.	Matric or equivalent	(a) Matric or equivalent; and (b) Passed Exam.; and (c) 3 years experience in clerical cadre. (a) Matric or equivalent; and (b) 1 year service as storeman or Meter Reader; and (c) Passed clerk LDC Exam.	U.D.C.

1	2	3	4	5	6
Personal Assistant to Chief Engr.	Rs. 160-10-250.	(a) Graduate; and (b) Shorthand speed 100 words per minute; and (c) Type 35 words per minute.	(a) Matric or equivalent; and (b) Shorthand speed 100 words per minute; and (c) Typing speed 35 words per minute.	Nil.	Assistant-in-Charge/Supdt. (Clerical).
<p><i>Note.</i>—Direct recruitment is resorted to only if suitable departmental candidates are not available.</p>					
Stenographers.	Rs. 80-5-120-EB-200-10/2-220.	(a) Matric or equivalent; (b), As for P.As.	As for direct recruits.	Nil.	(1) P. As. (2) Assistant in-Charge.
<p><i>Note.</i>—Direct recruitment is resorted to only if suitable Departmental candidates are not available.</p>					
Ferro Printer	Rs. 60-5/2-75	Middle Standard	Same as for direct recruits.	Nil.	Draftsman Gde. III.
Daftry	Rs. 35-1-50	No direct recruitment made.	Middle school standard.	Nil.	
Peons	Rs. 30-1/2-35	Middle Shoold standard		Nil.	Daftry
Chowkidars	Rs. 30-1/2-35	Nil	Nil	Nil.	

## APPENDIX VII

(Vide para 72)

### DIVISION OF RESPONSIBILITY FOR THE INITIATION, PLANNING AND EXECUTION OF WORKS PROJECTS

Stage	Phase	Responsibility				
		Users	Administrative Staff	Engineers		
I	2	3	4	5		
I. ADMINIS- INCEPTION		1. Initiation of De- mand.	2. Convening of Users' Recce.	..		
TRATIVE		3. Carry out User's Recce in order to draw up an appreciation outlining the necessity for the work, its scope, tentative location and rough cost.	..	4. Produce Rough Cost on a "Not exceeding" basis.		
PLANNING.						
					5. Consideration of the Demand.	
					6. ACCEPTANCE IN PRINCIPLE.	



5

4

3

2

1

## PRELIMINARIES

7. Convening Key Plan/Costing  
Recce.

8. Carry out Key Plan/Costing Recce—in order to determine site and general layout and to examine the scope of the Project in broad detail and prepare a statement of case.
9. Produce Skeleton Layout Plan, Indication of cost and an Engineer Appreciation of the Project.

10. Recce Report submitted to CFA through staff channels.
11. Indication of cost checked by CFA's Engineer Adviser.

*Note: 1*

In the case of projects to be accepted by Government or Service HQ., the Indication of cost is checked by the Ministry of Finance also.

12. Reply to queries raised by Finance or Engineering aspects.

## FINAL

## 13. ACCEPTANCE OF NECESSITY

14. Convene Sitting Board to determine detailed sitting and layout of the Project and to draw up an appropriate estimate of cost.
15. Produce layout plans and approximate estimate.

16. Sitting Board Report with 17. Approximate Estimate checked by the Engineer Adviser to CFA.  
 18. Reply to queries raised by Finance on Engineering aspects.

N. B.: In the case of proposal to be approved by Service HQ by Ministry of Finance also.

## 19. ADMINISTRATIVE APPROVAL.

20. Allotment of funds for Navy 21. Allotment funds on behalf of Staff in the case of Army and Air Force Works.

## II. TECHNICAL PLANNING OF DESIGNS AND CONTRACT DOCUMENTS.

22 Land Acquisition (through 23. Design Calculation.  
 ML & C). 24. Preparation of detailed Drawings and Specifications.

25. Preparation of Contract Documents.

26. Invitation of Tenders.

27. Provisioning of Stores.

28. Costing of work.

29. Technical Sanction.

30. Issue of Tender Documents.

31. Acceptance of Tender.

32. Execution of Contract Agreement.

33. Issue of Work and Deviation Orders and amendments to Contract.

34. Maintenance of Time and Progress Charts.

## III. EXECUTION CONSTRUCTION

35. Supervision of Work.

36. Submission of Periodical Progress Reports to Higher Authorities.

37. Interim Payments to Contractors.

38. Review of funds requirements and submission of Demands for modified appropriations.

39. Measurement of work.

40. Submission of Completion Report (Part A) on physical completion of the work.

41. Preparation and check of final bills.

42. Payment of final bills to Contractors.

43. Finalization of Accounts.

44. Completion of Records (Registers of Buildings, Record Plans, etc.)

45. Submission of Completion Report (Part B, when Accounts are closed).

46. Arbitration (if it arises).

47. Answering Audit Objections, CTE's Objections and Audit Paras (if they arise.)

#### IV. WINDING UP

## APPENDIX VIII

(Vide para 80)

*Statement showing a number of cases where there have been delays of seven months or more in commencement of work after allotment of funds in the case of projects costing over five lakh rupees. (Information furnished to the Committee in December, 1957)*

Year	Serial No.	Name of Project	Estimated cost (in lakhs)	Date of Administrative approval	Date of funds allotted	Date of commencement of work
1	2	3	4	5	6	7
1954-55						
	1	BAREILLY—Provision of permanent accommodation for UP Area Phase II. . . . .	5.468	18-12-54	15-4-55	12/55
	2	RANIKHET—Improvement to Water Supply . . . . .	5.81	30-12-54	15-4-55	8/56
	3	CALCUTTA—Provision of permanent accommodation for 101 ORs. of an Inf. Bn. at Fort William . . . . .	8.956	15-10-54	15-5-55	4/56

1	2	3	4	5	6	7
4	LEBONG—Provision of Married accommodation for GCOs/ORs. and garages for vehicles of an Inf. Bn.		12.84	30-12-54	15-4-55	7/57
	Rev. . . .		19.44	6-12-56		
5	SHILLONG—Provision of furniture for making good deficiencies . . . .		5.156	30-11-54	15-4-55	3/57
6	MHOW—Construction of 15 Married officers' quarters .		6.97	23-8-54	8-2-55	11/55
	NAVY					
7	Naval Stores Depot, Kurla . . . .		10.43	31-8-54	17-9-54	10/55
	AIR FORCE					
8	ADAMPUR—Provision of Pt. Dom. accommodation for No. 8 Wing . . . .		34.56	18-3-55	12-4-55	1/56
	FACTORIES					
9	ISHAPORE-MSF—Construction of 80 J type quarters Phase I . . . .		5.84	8-9-54	23-5-55	9/56
	Rev. . . .		7.41	5-5-56		
	ARMY					
10	ISHAPORE—Provision of additional accommodation for office and laboratory at TDE(M) . . . .		6.45	5-8-55	12-4-56	6/57
	Rev. . . .		8.39	17-1-57		

11	LANSLOWNE—Improvement to Water Supply . . .	6·512	7-11-55	12-4-56	Not yet commenced
12	CHANIPORE/BALASORE—Provision of accommodation at Proof & Experimental Establishment . . .	5·537	2-11-55	12-4-56	Do.
13	MHOW—Provision of Pt. accommodation for 198 Single Officers of the Infy. School . . .	24·84	2-8-55	23-8-55	6/56
FACTORIES					
14	KIRKEE-AF—Replacement/Reconditioning of temporary industrial buildings . . .	7·43	5-10-55	21-3-56	2/57
15	ISHAPORE—MSP—Construction of 64 H type quarters . .	7·04	6-10-55	17-4-56	Not yet commenced
16	MURADNAGAR-OF—Renewal of roofs of industrial and residential buildings . . .	8·26	5-11-55	17-4-56	Do.
ARMY					
17	WELLINGTON—Provision of permanent accommodation for the DSSC Phase II . . .	25·85	31-10-56	27-12-56	Do.
18	AHMEDABAD—Provision of permanent accommodation for Army Units . . .	18·45	15-12-56	17-1-57	Do.
19	BHUSAWAL—Provision of permanent accommodation for Army Units . . .	18·32	6-12-56	17-1-57	Do.
20	AHMEDNAGAR—Provision of accommodation for Armoured Static Workshop E.M.E. . .	21·31	14-12-56	17-1-57	Do.
21	BAGJOLA—Provision of permanent Joint Army and Navy Transmitter Station. . .	25·61	29-12-56	18-2-57	Do.

1	2	3	4	5	6	7
22	BARRACKPORE—Provision of Bulk-Cum-Pack POL Storage accommodation.	. . . . .	6.70	29-10-56	1-2-57	Not yet commenced
23	CALCUTTA—Provision of accommodation for 235 IWT OP Coy and one Platoon of 238 IWT W/ Shop Coy.	. . . . .	31.65	29-10-56	1-2-57	Do.
24	GANGTOK—Provision of accommodation for troops	. . . . .	13.75	27-7-56	6-11-56	Do.
25	BABINA—Provision of permanent garages for 'A' Vehicles of 1 Armed Bde.	. . . . .	48.90	22-11-56	1-2-57	Do.
NAVY						
26	JORHAT—Provision of work services for permanent domestic & technical accommodation for IAF station.	. . . . .	112.84	11-12-56	25-1-57	Not started

## APPENDIX IX

(Vide Para No. 89)

### BASIS FOR DEMAND OF FUNDS FOR THE MAINTENANCE OF BUILDINGS, ROADS AND INSTALLATIONS BY THE M.E.S., C.P.W.D., AND THE RAILWAYS.

Funds for the maintenance of buildings, roads and installations are demanded by the different departments annually on the following basis :

#### *Military Engineer Services*

- (a) Permanent buildings including water supply fixtures, etc., but excluding internal electrical installations built upto 31-12-42. 2½% of Capital value.
- (b) Permanent buildings including water supply fixtures, etc., but excluding internal electrical installations built after 31-12-42. 1½% of Capital value.
- (c) Temporary buildings including water supply fixtures, etc., but excluding internal electrical installations. 1½% of Capital value for 1st year.  
3% of Capital value for 2nd year.  
5% of Capital value thereafter.
- (d) Internal electrical installations in permanent buildings (also perimeter and external lighting) built upto 31-12-1942. 11% of Capital value.
- (e) Internal electrical installations in permanent buildings (also perimeter and external lighting), built after 31-12-1942. 8% of Capital value.
- (f) Internal electrical installations in temporary buildings (also perimeter and external lighting). 11% of Capital value.
- (g) Military Roads . . . . . Rs. 1,840 per mile.

#### *Central Public Works Department*

Year of construction		
Pre 31-3-42	1-4-42 to 14-8-47	After 15-8-47

#### *Office Buildings*

- |                                                         |      |      |      |
|---------------------------------------------------------|------|------|------|
| (a) Permanent high class such as Sectt. block . . . . . | 0.6  | ..   | ..   |
| (b) Other permanent buildings . . . . .                 | 2.75 | 1.75 | 1.25 |
| (c) Temporary . . . . .                                 | 3.5  | 3.0  | 2.5  |



	Year of construction		
	Pre 31-3-42	1-4-42 to 14-8-47	After 15-8-47
<b>Residential Buildings</b>			
(a) Permanent . . . . .	2.75	1.75	1.25
(b) Temporary . . . . .	3.50	3.00	2.5
<b>Special Repairs</b>			
(a) Monumental types . . . . .	0.25	..	..
(b) Permanent . . . . .	1.00	1.00	1.00
(c) Temporary . . . . .	1.50	1.00	1.00
Annual Repairs (Elec.) . . . . .	8.00	7.00	5.00
Special repairs etc. with fans . . . . .	3.50	3.25	3.00
Special repairs without fans . . . . .	2.00	1.75	1.50
Roads . . . . .	Average 3,000 per mile.		

### **Railways**

For the purpose of maintenances, buildings on Railways are divided into the following categories :

- (i) Offices
- (ii) Stations
- (iii) Workshops and Stores buildings
- (iv) Electrical Power Stations and Sub-Stations
- (v) Sheds and Halls
- (vi) Residential buildings.

2. Funds for normal maintenance of the above buildings are demanded and allotted on unit basis; one unit being equal to 100 SFT. of plinth area. The unit rates, as prevailing at the moment, are indicated below for each class of buildings :

	Rs. per unit per annum
(i) Offices . . . . .	16
(ii) Station buildings . . . . .	22.38
(iii) Workshops and Stores buildings . . . . .	16
(iv) Electrical Power Stations and Sub-stations . . . . .	12
(v) Sheds and Halls . . . . .	3.60
(vi) Residential buildings . . . . .	9.96

3. Expenditure on water supply fixtures and internal electrical installations is met with from the above allotment and separate funds for these demands are not allotted.

4. For special repairs, funds are demanded on the basis of average expenditure during the preceding three years.

## APPENDIX X

(Vide Para 94)

*Statement showing the actual provision of residential accommodation (permanent, hutted, tented and hired/requisitioned) to the Officers and men in the Defence Services.*

### ARMY

#### *Officers*

Married	.	.	.	.	.	.	73%
Single	.	.	.	.	.	.	100%

#### *J.C.Os.*

Married	.	.	.	.	.	.	47%
Single	.	.	.	.	.	.	53%

#### *O. Rs.*

Married	.	.	.	.	.	.	9%
Single	.	.	.	.	.	.	91%

#### *N. Cs. E.*

Married	.	.	.	.	.	.	82%
Single	.	.	.	.	.	.	18%

### ORDNANCE FACTORIES

Quarters have been provided to gazetted and non-gazetted Officers to the extent of 97% and 88  $\frac{1}{2}$ % respectively.

The number of quarters so far provided to the non-industrial and industrial personnel covers 36  $\frac{1}{2}$ % of the total number of such employees.

### NAVY

#### *Married accommodation-Officers*

Quarters already built	.	.	.	.	.	13.7%
Quarters under construction	.	.	.	.	.	8.7%

#### *Married accommodation-Ratings*

Quarters already built	.	.	.	.	.	22.8%
Quarters under construction	.	.	.	.	.	27.8%

AIR FORCE

						Existing	Target for 2nd Five Year Plan
Married Officers	.	.	.	.	.	51%	75%
Married Airmen	.	.	.	.	.	60%	75%

## APPENDIX XI

(Vide Para 116)

Note on the different types of contract entered into by the M. E. S.

The various types of contract entered into by the M.E.S. are given below :

### (i) LUMP SUM CONTRACT

Lump Sum Contract (IAFW 2159) is generally used for all original works and for maintenance services which are excluded from term contracts and may be based on Bills of Quantities, a pre-priced Schedule of Works or on drawings and specifications.

### (ii) MEASUREMENT CONTRACT

(1) *Percentage Rate Contract (IAFW 1779)* : This is intended to be used under certain circumstances as an alternative to the Lump Sum form of contract. It is expressed in terms of a percentage above or below the rates given in the M.E.S. Schedule and is adopted in the following circumstances :

- (a) When there is difficulty in estimating the quantities correctly until the work has been commenced (e.g. extensive roof or floor repairs, or other works involving large alterations).
- (b) When it is considered imperative to commence work without delay which the preparation of B.Qs. involves and the alternative of a lump sum contract without B.Qs is also not considered feasible.
- (c) In other special cases (e.g. when local conditions make it unlikely that contractors capable of tendering on a lump sum basis will be forthcoming).

(2) *Item Rate Contract (IAFW 1779A)* : This form of contract is suitable for the undernoted types of construction :

Construction of roadwork, new or renewals; construction of runways and taxi tracks ; Periodical painting and decoration services where record measurement books are not complete; Special Repairs Renewals to floors or roofs, etc., where a limited number of items of builders work are involved.

The contract contains a schedule of items in which the specification of each item of work is given and the contractor is required to quote his rate for each item.

**(iii) TERM CONTRACT**

**Term Contract (IAFW 2821)** is used generally for minor works, ordinary repairs and maintenance required to be carried out from time to time during the period or term specified in the contract. It is expressed in terms of a percentage above or below the rates given in the M.E.S. Schedule of Rates applicable to the zone.

**(iv) SUPPLY OF MATERIALS CONTRACT**

**Rate Contract for Supply of Materials or Furniture (IAFW 1815-Re)** is used for supply of stores for use by D.E.L. and for supply of furniture, etc.

**(v) HANDLING OF ENGINEER STORES CONTRACT**

**Tender and Contract for Handling of Engineer Stores (IAFW 2320)** is normally used for loading, unloading, removal, stacking etc., of stores in stores installations.

(NOTE.—IAFW 2159, 1821, 1779 and 1779-A referred to above are used in conjunction with General Conditions of Contracts—IAFW 2249).

The broad features of the Lump sum and the Measurement Contract have already been stated. The relative advantages and disadvantages of lump sum contracts are given below :—

***Advantages :***

- (1) Completion cost of works is known at the outset.
- (2) No measurements are involved except in the case of deviations and consequently there should not be any delay in final payment.
- (3) A Lump Sum contract based on Bills of Quantities enables contractors to quote their own rates for each item of work in the B.Q. Such quotations are more realistic than an overall percentage on a standard schedule.
- (4) Preparation of final bill is easier.
- (5) A measurement Contract entails a considerable amount of measurement and affords opportunities for collusion. It also necessitates larger staff and larger measure of audit and other checks. As measurements in Lump Sum contract are restricted only to deviations, the possibilities of collusion and delays are considerably reduced.

***Disadvantages***

Owing to the necessity of preparing detailed and comprehensive drawings and Bills of Quantities or other pre-estimates, the preparation of lump sum tender documents needs more time than a Measurement Contract.

## **APPENDIX XII**

**(Vide Para No. 146)**

### **CHAPTER FOR THE TECHNICAL EXAMINATION BRANCH**

#### **1. General**

The Technical Examination Branch under the Chief Technical Examiner at Army Headquarters is responsible for

- (a) taking test measurements during the progress of works.
- (b) checking a percentage of accepted contracts and amendments
- (c) technical examination of M.E.S. final bills after payment.
- (d) checking of Casual Personnel Bills and Muster Rolls in respect of Works carried out by Directly Employed Labour.

#### **2. Measurements**

Except in special circumstances where concurrent check may be ordered, the check by the CTE should be carried out soon after measurements have been taken and recorded by the M.E.S. This will include a percentage check of measurements of hidden work. When possible the Technical Examination Branch should check measurements and rates of completed works recorded in Measurement Books, abstracts, requisitions etc. before final bills are submitted so as to prevent loss to Government by the detection of errors before payment, but these checks will not delay the finalisation and payment of bills.

#### **3. Contracts**

The Technical Examination Branch will check a percentage of accepted contracts and amendments thereto with the object of bringing to the notice of the Engineer any points which are likely to lead to extra claims from the contractor. They will also check whether the specifications have been properly described and whether the correct Schedule items and prices have been quoted. This check should, if possible, be exercised within a month of the receipt of the accepted contract in the CDA's Office so that necessary amendments or deviations to the contract may be issued while the contract is still in force.

#### **4. Final Bills**

Check of final bills will be completed generally within three months of their receipt in C.T.E.'s Office, so that objections raised may be dealt with by the staff who carried out the work. This check will be from bills, contractors' deviations and other documents. If necessary, the CTE's staff may also visit site of works for an on the spot check.

**5. *Works in progress, works expenditure, and functions outside the scope of the Technical Examination Branch.***

**(a) Works in progress and works expenditure :**

While visiting works in connection with check measurements it will be the responsibility of the Technical Examination Branch to see whether the quantity and quality of the various classes of work set forth in the particulars of Schedule of Rates , Bills of Quantities and measurements on which payment is claimed fairly represent the quantity and quality of work actually executed.

**(b) Functions outside the scope of the Technical Examination Branch.**

The functions of this Branch do not include :

- (i) Any enquiry into the suitability of designs, specifications or conditions of contract or any modifications made therein under the terms of the contract.
- (ii) The examination of the Quality of workmanship or of materials except in so far as may be necessary to determine whether the proper description or schedule item is quoted and the proper price charged under the contract.
- (c) Dealings with Contractors.

This Branch will not deal with contractors either in person or through correspondence.

**6. *Works by Directly Employed Labour.***

The Technical Examination Branch will check Casual Personnel Bills and Muster Rolls so far as technical labour employed and stores issued are concerned. They may also check at site the work stated to have been done by the labour on a particular C.P. Bill of Muster Roll.

**7. *Method of Working.***

- (a) The Technical Examination Branch will work in close touch with the Controllers of Defence Accounts.
- (b) CTE will bring to the notice of the E-in-C serious irregularities noticed during technical examination within the scope of this Charter. Similarly Technical Examiners at Commands will bring such irregularities to the notice of Chief Engineers.
- (c) The Branch will be supplied with full information and its visiting examiners afforded every assistance by complying with their demands for pertinent documents for examination at site.
- (d) The CTE will forward his observations in draft form to the E-in-C's. Branch for comments. Where the M.E.S. are able to satisfy a part or whole of the observations, the draft paras will be suitably modified before inclusion in the half-yearly reports, submitted to the E-in-C, QMG, DADS and Ministries of Defence and Finance (Defence).

[G. of I. M.D., No. 57/11/D (E&Q) 1729-E/D (E&Q), dated 11c 21s February, 1955].

### APPENDIX XIII

*Statement showing the summary of Conclusions/Recommendations of the Estimates Committee contained in the Report.*

Sl. No.	Para No.	Summary of Conclusions/Recommendations
1	2	3
1	10—11	<p>The Committee have called for a statement showing the action taken by Government on the recommendations of the M.E.S. Review Committee.</p> <p>The Committee recommend that a time limit should be set for coming to definite conclusions on matters over which a Committee have deliberated and put in much time and labour. Further they would suggest that in order to expedite decisions on important issues, the system of discussions between the concerned authorities should be adopted to an increasing extent.</p>
2	12	<p>The Committee would suggest that while selecting the personnel for important Committees, it should be ensured that at least some of them are not over-burdened with other responsibilities so that they will be able to finalise their work within a reasonable time.</p>
3	14	<p>The Committee view with concern recurring over-budgeting which is contrary to sound finance.</p>
4	16	<p>The Committee feel that the reasons for the lapse or surrender of funds are avoidable and clearly show a lack of proper planning and an inadequate appreciation of the various preliminaries to the execution of works on the part of concerned authorities. The Committee have no doubt that with sufficient care and foresight, the infructuous expenditure and labour on projects which were not taken up though included in the budget estimates could have been avoided. The Committee would refer in this connection to para 12 of their Ninth Report (First Lok Sabha) in which they have stressed the necessity of proper planning of all aspects of a scheme before its inclusion in the Budget estimates to avoid lapse of funds.</p>



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The Committee notice that it is not only in the case of construction works, but even under other heads that there is a rush of expenditure towards the close of the financial year. This leads one to believe that apart from other reasons there is a tendency to relax the pace of activity during the first 8 or 9 months of the year and to accelerate it only during the last 3 months.

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The Committee are concerned at the persistent rush of expenditure during the last months of every year as it is bound to create the impression that public money is being expended hastily and in an ill-considered manner. Although the Committee were told by the Controller General of Defence Accounts that no checks (audit and technical) were overlooked during the rush period, they fail to understand how the normal complement of staff sanctioned for this purpose could effectively apply all the requisite checks over about 1/3rd of the total yearly expenditure in one month only unless either the scrutiny exercised is perfunctory or the staff strength is liberal and is under-worked during the other months of the year. The Committee feel that the rush of expenditure during the last quarter of the year is not inevitable. The Committee do not approve of the practice of proceeding in a leisurely fashion in the first nine months of the year and then making frantic attempts to see that the bills of contractors are passed by the end of March. The Committee have no doubt that the position could improve considerably if attempts were made at all levels to avoid rush of expenditure towards the close of the year by arranging for bills to be paid to a larger extent, from the beginning of the year. To facilitate the spreading of expenditure evenly throughout the year, they would suggest that the quarterly allotments of expenditure proposed for the year should be planned by the G.Es. immediately on receipt of the yearly allotments. This may be done in consultation with the C.W.E's. The progress of actual expenditure against the planned expenditure should be closely watched from month to month by means of a chart with a view to detect divergences if any. A periodical review of the proposed expenditure should also

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be made by the C.Es. who should arrange meetings, if necessary, with their C.W.E.'s and G.Es. for removing any bottlenecks in the progress of planned expenditure.

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The Committee are not happy over the delay in the matter of rent recoveries. They feel that with the passage of time and further accumulation of dues, settlement would become more difficult. Also since these issues will have to be settled some time, there is no reason why it should not be done early. They would therefore suggest that the various issues involved should be settled with the parties concerned without any further delay by arranging discussion at the highest level.

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The Committee fail to understand how heavy outstandings were allowed to accumulate against third parties which could have had the use of public buildings only after necessary permission and under agreed conditions. They have no doubt that this has been mainly due to laxity in enforcing the conditions and recovery of rents as and when it fell due. They recommend that effective measures should be instituted to recover the outstandings and that the officers concerned should be made to realise their responsibility in this matter.

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It is seen that the percentage of establishment charges to the workload of the M.E.S. has been steadily increasing during the last 5 years and that the percentage in the M.E.S. is very high as compared to the CPWD and the Railways.

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The Committee feel that in order to help an appraisal of the exact extent of establishment charges in relation to the workload, indications should be given in the Appropriation Accounts about the actual incidence of these charges including those which are on account of work charged establishment.

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The Committee feel that while allowance should be made for the uncertainties implied in planning and forecast of funds, it is not necessary that staff sanctioned on the basis of anticipated workload.

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should be kept in position even when the anticipated workload is not expected to materialise. The Committee recommend therefore that a systematic and scientific assessment of the staff position with reference to their achievements and future programme should be carried out periodically, and efforts be made to achieve the maximum economy that could be effected in all directions even to the extent of suitably reorganising the structure of the organisation.

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The Committee suggest that a system should be devised whereby the G.Es. should be required to correlate their expenditure on establishment to the expenditure on the execution of works and maintenance. The Garrison Engineers may be encouraged to give an objective analysis of the position in their Divisions by introducing a system of special commendations to the Garrison Engineers in their Confidential Reports for such work.

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The Committee would recommend that a systematic comparison between the M.E.S. Organisation and those of works agencies of the Central and State Governments should be undertaken with a view to finding out the reasons for the varying establishment charges as between the different Works Organisations and to arrive at the most economical and efficient methods of executing works. Based on the results of such an examination the feasibility of entrusting progressively more and more works for execution to different agencies which have special advantages to work economically should be considered after assessing their capacity and resources and providing for augmentation of that capacity where necessary.

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The Committee would emphasize the necessity of a review being carried out for the purpose of replacing engineer officers by non-technical officers where the former are performing functions which could be performed equally well by the latter, so that technical men might be released for engineering activities. Even in respect of stores duties where some specialised knowledge and

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experience will be desirable, it is not necessary to employ a full fledged engineer. It should be sufficient to utilise departmentally trained persons with adequate experience.

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| 15 | 38 | The Committee feel that there is scope for reduction in the number of Superintending Engineers employed in the Offices of the Chief Engineer. The Committee, desire that a review should be carried out from this point of view and a reduction in the number of S.Os. I in the Chief Engineer's Offices should be brought about by amalgamation of Sections and entrusting their work to S.Os.II in suitable cases.                                                                                                                                                                                                                                                                                                                             |
| 16 | 39 | The Committee feel convinced that by a judicious delegation of powers internally in the C.Es. Office, the posts of Deputy Chief Engineers could be abolished.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 17 | 40 | The Committee feel concerned about the continued existence of unutilised capacity in the context of the prevailing shortage of technical personnel in the country. The Committee recommend that there should be a constant review regarding idle capacity and systematic efforts should be made to take up work from other Central Government or State Government Organisations especially in the localities where the Divisions are under-loaded. The surplus staff assessed as a result of the review should be either transferred to other Divisions which are under-loaded or should be retrenched. Also there should be a better programme for creation of Divisions in accordance with a fully worked out plan for the execution of works. |
| 18 | 48 | The Committee consider it necessary that a standard should be laid down regarding the number of Divisions in an Area according to the nature of the work and that a review should be made in order to arrive at some uniformity.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 19 | 50 | The Committee would like to be assured that in view of the cuts in the size of the Plan, appropriate action has been taken to prune the establishment accordingly and effect the necessary savings.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

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20	52	The Committee consider that while planning and designing of technical accommodation required for the Navy and Air Force may remain with the E-in-C's Office, planning and designing work for the Army and Factories in addition to the planning and designing work for the Navy and Air Force should be centralised as far as possible at the Command level. The C.W.Es. and G.Es. should be relieved to a very large extent of responsibilities for planning and designing and be left free to attend to their duties of supervision and execution. The Committee feel that if this is done, it will not be necessary to carry a fairly large complement of Planning and Designing Staff in the establishments of the C.W.Es. and G.Es. and that it will lead to considerable economy by reduction in strength.
21	53	The Committee feel that standardisation of type designs could lead to economy in the strength of the planning and designing staff and would, therefore, recommend examination of this question from this aspect.
22	54	The Committee would recommend that the Deputy Director (Designs) in the E-in-C's office should be regularly posted with details of planning done at the various Commands, especially those with special features, so that he could issue suitable instructions to all the Commands. This would also help to bring forward subjects of interest for discussion at the Conference of the E-in-C and the C.Es.
23	57	The Committee would recommend having regard to the importance of the Surveyor of Works cadre in the Works Organisations, that steps should be taken to provide Surveyor's courses, both preliminary and advanced, in engineering colleges.
24	59	The Committee have in respect of the posts which are filled partly by direct recruitment, called for details showing the percentage of posts which are held by departmental promotees. The Committee recommend that in order to create a feeling of hopefulness and to evoke enthusiastic effort, minimum percentages should be prescribed in respect of the posts in this category which would be filled by departmental promotion.

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| 25 | 63 | With regard to the prospects for Civilian Officers the Committee consider the recommendation made by the M.E.S. Review Committee in this respect unexceptionable and hope that the principle would be accepted that where operational matters are not involved, an officer possessing the requisite engineering skill and competence could be entrusted with a technical job, notwithstanding the fact that he might not have been trained as a soldier. This Committee have considered separately the question of making the organisation entirely civilian.                                                           |
| 26 | 64 | If the Committee's recommendation that Engineer personnel should not be wasted on Stores and Personnel and Administrative duties is accepted it would incidentally throw open avenues for promotion to those officers of the Barrack Stores cadre and the Administrative Cadre, who have gathered valuable experience in those activities but would have no prospects for promotion otherwise.                                                                                                                                                                                                                          |
| 27 | 66 | The Committee desire that the question of shortage of draftsmen should be examined from the larger aspect of availability of technical personnel of middle and lower grades to meet all the needs of the country. Such an examination should take into account the existing short supply, the growing needs, arrangements to meet them and the terms of employment. The Committee also feel that if the problem of short supply of technical staff of this type to Government departments is due to the grade of pay offered to them, it should be taken up seriously for examination and remedial measures worked out. |
| 28 | 68 | The Committee would suggest that it may be examined whether the military training of tradesmen who retire from the Corps of Engineers could be dispensed with when they have finished their colour service, especially if they are employed in the same technical job for which they are trained.                                                                                                                                                                                                                                                                                                                       |
| 29 | 69 | The Committee recommend that the question of relaxing the rule that requires recruitment of draftsmen, surveyors and others who retire from the Corps of Engineers only through the                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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Employment Exchange be examined. The feasibility of registering such persons in the Employment Exchanges while they are in the last lap of service may also be considered.

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The Committee are not convinced by the reasons given for the high percentage of temporary personnel of all categories in the M.E.S. It is reasonable to infer that even on the basis of the workload of 1952 a fair percentage of permanent posts had not been created. The Committee would urge that the matter regarding the confirmation of temporary personnel may be very carefully examined and early action should be taken to fix the number of permanent posts on a reasonable basis.

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The Committee would recommend that a comparative study should be made of the procedure followed in all the works organisations and certain uniform standards including simplification of procedure, common terminology etc. evolved which could be applicable to all. The uniform standards so arrived at might be followed by all the Departments with such modifications as are necessitated by the circumstances peculiar to each Department.

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The Committee feel that if the work is approached with a sense of urgency and responsibility, a good portion of the delay in the stages prior to commencement of works would be eliminated. Authorities responsible for taking decisions at every stage should consider matters in a complete form and arrive at firm decisions. At every stage careful attention should be given to planning. as inadequate planning at each stage would only cause delays in successive stages. Responsibilities at each stage should be fully realised and should be shouldered by the designated authorities without any attempt to pass them on to others, above or below them. Also care should be taken even at the very early stages that engineer efforts in terms of preparation of estimates etc. are not wasted on projects which are not likely to materialise or which may receive a very low priority.

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The Committee are of the view that no change should be made on account of changes in users' requirements in cases which arise only because

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of some change of personality or change of some ideas without any great principles being involved. While providing for exceptional cases mentioned above, it should be made clear that the changes should be approved by a very high authority who should satisfy himself personally about the needs for the change and then only order it.

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As regards the delay attributable to the bulk system of planning, the Committee hope that immediate steps will be taken to ensure that while only the minimum number of stages will be retained, they are also properly phased out. They would suggest that a workable time table should be laid down to be adhered to normally, and a review should be made periodically to examine cases where the time table is exceeded. From time to time, as efficiency improves, the time table should be modified to introduce better standards and the matter should be kept under continuous review.

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The Committee observe that even after funds are allotted, there is considerable delay before the work is commenced. They, however, hope that the remedial measures suggested by them in the foregoing para will eliminate such delays also.

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While agreeing that much would depend on labour leadership, the extent of development of civic sense and the willingness to give a full measure of outturn, the Committee would recommend that opportunities must be taken every now and then to undertake departmental execution of works in suitable cases and that standards must be set not only of quality of work but also of efficiency of organisation, economy and fair deal to labour.

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The Committee would suggest that an objective study should be undertaken at a few of the stations where different Works Organisations exist side by side to find out whether one of them can handle the responsibilities of the others also by a suitable understanding among them. Administrative difficulties could be overcome by an imaginative approach keeping in view the basic objective of efficient and economic utilisation of national resources in the shape of technical manpowers, material and finance.



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38	87	The Committee do not appreciate the need for the levy of departmental charges by the M.E.S. on works executed for any of the Defence Services. Even as regards the levy of departmental charges, among the works Services of the Government of India and the States the Committee would suggest that the feasibility of doing away with the system should be considered. If, however, it is not possible to abolish this system altogether it should at least be kept at a uniform and minimum basis.
39	89	The Committee would suggest that as a part of the examination of rates of maintenance for roads, it should also be examined whether the C.P.W.D. rates are on the high side.
40	90	The Committee would suggest that a common principle should be evolved for all the different works services regarding the basis of providing funds for maintenance, and that an examination should be conducted with this end in view. The States may also participate in such examination.
41	92	The Committee would suggest that a study should be undertaken, so that it could be determined in what cases the capacity of the civil installations or the Defence installations should be augmented. They desire that while considering this matter attention should not be confined by each party to its own needs, but the question should be looked upon as one of general interest, leading to increased civic amenities and general well being of the people.
42	93	The Committee feel that the C.W.Es should be encouraged to submit periodic reports on the aspects of reducing maintenance costs of buildings, roads, installation etc., and the reports should be scrutinised in the Planning and Designs Section of the Engineer-in-Chief's Branch for eventual adoption of common standards in the Commands.
43	94	While the Committee appreciate the difficulties in solving the problem of accommodation they feel that the non-availability of funds cannot be the limiting factor to the extent it is believed, since a considerable proportion of funds sanctioned is allowed to lapse.

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- 44      95      The Committee understand that while the M.E.S. have fixed ceiling costs on plinth area basis they have not done it in the same manner as is done in the C.P.W.D. and that since M.E.S. build accommodation all over India, uniform scales cannot be laid down. The Committee, however, feel that it should be possible to work out ceiling costs of buildings in different areas by adopting the methods suggested by the Experts Committee for building works appointed by the late Ministry of Works, Production and Supply. They would, therefore, recommend that early steps should be taken in this direction in the interest of economy.
- 45      96      The Committee observe that the scales of residential and office accommodation are more liberal on the defence side than on the civil. They would recommend that the scales of accommodation for the civil and military officers should be uniform and should be made as austere as possible.
- 46      98      The Committee desire that it should be examined whether the buildings which are expected to remain vacant for a long time can be handed over to meet the requirements of other Central Government or State Government agencies and also whether care of such buildings could in suitable cases be entrusted to the State Government Departments having similar responsibility locally.
- 47      99      The Committee feel convinced that for an examination of the nature entrusted to the M.E.S. Construction Committee, it would have been useful if non-officials with necessary knowledge and experience had also been included. Such an association was almost indispensable in this particular case since the terms of reference of this Committee include a comparison of the specifications used by the M.E.S. with those used by private enterprise. The Committee would emphasize that as a rule while appointing any Committee to enquire into matters with a view to reporting on economies, efficiency of administration, improvement of technique etc., non-officials should be associated as members.
- 48      102      The Committee consider that it is not necessary to have separate lists of contractors for the different Works Organisations of the Government of India
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and of the States. They would, therefore, suggest that there should be a common consolidated list of contractors for all works organisations. This should be on an All India basis for the higher categories and on a regional basis for the other categories, the categories being determined after discussions among the representatives of the different Departments. There should be a central co-ordinating body to maintain the register of contractors and to act as a clearing house for information relating to the performance and reliability of the contractors. Suitable procedure should also be devised to ensure that a contractor is employed only within the limits pertaining to his category and is not overloaded with work.

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The Committee feel that the procedure for taking action against contractors such as demotion, removal, suspension or blacklisting should be such as to infuse confidence in the contractor that action has not been taken arbitrarily. For this purpose the Committee feel that an advisory Committee consisting of non-officials should be constituted at each Command and their advice taken before passing orders on the contractor. This would justify the action of the executive and save them from unfounded allegations regarding their motives and also give an assurance to the contractor that action has not been arbitrary. To the extent that the contractors need not be afraid of arbitrary exercise of executive power it will also reduce the scope for corruption.

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The Committee do not consider the present position regarding the co-ordination of information in respect of performances of the contractors to be satisfactory since it is possible for a contractor adversely reported upon in one works organisation to get work in another. Immediate steps should be taken to introduce the necessary co-ordination between the different works organisations. If as recommended by the Committee a consolidated list of contractors is kept by a central co-ordinating body, co-ordination in respect of this matter would become very simple.

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The Committee would recommend that a periodical review of the lists of contractors should be made so as to ensure that contracts are not awarded to those who do not satisfy all the requirements

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- 52      108      The Committee feel that periodic meetings should be held with the representatives of the contractors since such a system would, besides giving an opportunity for redress of genuine difficulties felt by contractors in execution of the works and in getting payments, also result in a greater degree of understanding between the Department and the contractors.
- 53      109      The Committee are of the view that if the associations of contractors are organised in the manner of professional bodies with pride in their work and lay down a code of conduct for their members to be enforced by them, it would not merely be to their benefit but would also indirectly help to tone up the efficiency of the Engineering Departments of Government and would help remove undesirable practices wherever they exist. It is understood that the Engineer-in-Chief has already suggested to the Builders' Association of India to organise themselves better. He is said to have also suggested that they should have a pool of mechanical equipment which could be hired by different contractors and that they should also arrange to establish technological schools to train up painters, brick-layers and other workmen. The Committee hope that the associations would seriously take up these suggestions. The authorities may also take up and encourage drawing up a code of conduct by the Association.
- 54      110      The Committee notice that the M.E.S. Review Committee have recommended that in cases of work of Rs. 1 lakh and over, the advertisement of invitations to tender should appear at least once in one local language paper and twice in English papers and if the value of the work is more than Rs. 10 lakhs, it should be advertised in other big towns also. While agreeing with this view generally the Committee would recommend that in order to create keener competition Indian language papers should be used to a greater extent as a medium of publicity in all cases of contracts big or small. In cases of works of more than Rs. 10 lakhs in value, advertisements should be made in the important language papers of other regions also. The Committee also suggest that a copy of the notice together with the tender documents should be supplied to the office of the recognised association of the contractors.

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55	111	The Committee came across complaints that contractors find difficulties in getting tender documents in time and complete in all respects. They recommend that it should be ensured that there is no ground for such complaints.
55	113	The Committee would recommend that an advisory body including non-officials should be constituted at different levels and the advice of such a body sought before taking a decision not to issue the tender documents. In the opinion of the Committee, such a system will inspire confidence and as stated in para 105 earlier, also reduce chances of corruption and allegations of corruption.
57	115	The Committee recommend that generally the tenders should be opened in the presence of contractors. However, in case for any special reasons, it is not considered feasible to do so, an advisory body consisting of non-officials as suggested in paras 105 and 113 should be associated with the opening of the tenders.
58	116	The Committee recommend that efforts should be made to facilitate the adoption of the lump sum contract with Bills of Quantities to a greater extent and for this purpose energetic measures should be taken to reduce the scope for deviations through proper planning, to speed up the work connected with standardisation of buildings and also to enlarge the scope for training of Surveyor of Works Staff.
59	117	The Committee would suggest that provisional quantities of the work to be done under a Term Contract should be calculated with a greater degree of approximation on the basis of works done previously and indicated in the contract.
60	118	Considering the extent to which deviations contribute to delays in execution of work and in payment of bills, the Committee would suggest that an analysis should be made of the cases of deviations that arise every year grouping them under the various factors that give rise to delay and a systematic study be made with regard to the ways and means of reducing the incidence of such fac-

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tors in future It would be desirable that before effecting any substantial deviations, a prior understanding is reached between the two parties as far as possible.

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The Committee would suggest that the question of reducing the upper limits of deviations be considered since such a procedure would encourage greater care in planning and in preparation of contract documents.

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The Committee found that it was believed in responsible quarters that the estimates of stores issued by the Department to contractors for the works especially in respect of cement, were made on a liberal basis and that the contractors were obliged to draw the entire quantity even though the work could not consume all that. The Committee consider that this matter deserves a probe.

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The Committee would like to commend for examination the suggestion that cement should be supplied to the contractor through Silosite, in the case of works costing above Rs. 2 lakhs, so that pilferage might be prevented.

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The Committee suggest that in projects of high magnitude where the M.E.S. undertake the issue of main stores, the contract value should be based on "Except Cement" and "Except Steel" rates so that the contractor's allowance of profit would be based on his capital outlay, that is, total cost of work less cost of steel and cement. The Committee believe that this will lead to more competitive quotations and even if it does not, the Government would know the real percentage of profit of the contractors.

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The particulars given in para 123 showing the number of contracts where the period of completion had to be extended, do not include figures from Eastern Command. Although this information was promised the Committee regret to observe that the same was not furnished until this report was finalised.

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In view of the large number of cases of extensions of period in contracts, the Committee would suggest that the actual method of maintenance of the Time and Progress Chart should be scru-

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tinised to see if it is on a realistic basis and whether the charts are properly studied and made use of. Also cases where extensions of period become necessary should be reviewed to see if they were solely due to unforeseen factors which could not have been avoided through proper planning and prompt action at every stage. The Committee would point out that extensions to contracts have a tendency ultimately to increase the cost of the works besides putting the contractor concerned at an advantage over the others who tendered on the basis of a specified period of completion, and would emphasise the desirability of proper planning with the object of reducing the incidence of the various factors which go to increase the number of cases where extensions in time of completion have to be granted.

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The Committee would suggest that the feasibility of introducing a clause in the contract providing for compensation to contractors in cases of delays which are not attributable to the contractors should be examined. This would keep the officers of the department alert in the discharge of their responsibilities, and might enable more favourable terms in the tender.

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The Committee feel that in case materials of a specified standard, for example, bricks, are not easily available, there should be a rational adjustment of specifications with reference to the materials available, and that a review should be made of such cases with a view to effecting modifications in specifications in accordance with the conditions that prevail in different regions.

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The Committee feel that an earnest attempt should be made to evolve a standard contract form for use in all the organisations of the Government of India based on a study of the different forms in vogue in various Departments and that for this purpose a Committee consisting of the representatives of the various Departments and experts from the Building Industry and Engineering profession should be appointed to make a thorough examination of the question and bring about uniformity in the contract forms. It would be desirable if the States also could participate

in the work of evolving standard forms of contract with a view to achieving uniformity in respect of the States also. In the opinion of the Committee a standard and simplified contract form will ensure free and healthy competition. It would also reduce the chances of contractors making provisions in their quotations for various disadvantageous clauses, which may occur in the present forms, without serving any practical purpose or being actually used by Government for their safety or protection.

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The Committee would emphasise the importance of having a uniform Schedule of Rates on a regional basis for use in all the Departments, for common types of works, since it would result in greater competition from contractors and would also ensure that the staff would be adaptable to any type of work whether it is in the M.E.S., Railways or the C.P.W.D., besides facilitating easier inter-departmental distribution of workload when circumstances so warrant. The Committee recommend that the work of evolving common terminology units of work and methods of measurement should be speeded up and a common schedule on a regional basis drawn up for use by all Works Services of the Government. To carry out the work involved in this, and to spread it up the services of retired engineers of the M.E.S., C.P.W.D. and Railways should be utilised.

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The Committee feel that contractors should be encouraged to prepare their bills since the time of the supervisory staff in the M.E.S. could be saved to that extent and also there would be greater expedition in the submission of bills the contractor being the most interested party. The Committee are of the view that this should be insisted upon in the first instance in the case of the bigger contractors. Even in the case of the others it should be gradually brought about. If on the contrary it is considered that there are insuperable difficulties in following the present rule, the Committee would only suggest that the rule should be changed to suit practice.

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The Committee are concerned to note that a large amount is due for recovery from Contractors. The Committee would emphasise that very



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energetic measures should be taken to enforce the recoveries and for keeping a systematic watch over the progress of recoveries.

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|----|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 73 | 135—136 | The Committee are not convinced that the present system of arbitration is in accordance with the fundamental principles of justice. The Committee understand that the normal practice in the U.K. is that an independent arbitrator is selected from among those who are members of the Institute of Surveyors, Institute of Architects, the Institute of Civil Engineers etc. and that in certain cases an eminent citizen is also appointed an arbitrator. The Committee are of opinion that a similar practice should be followed. Public spirited men could be found in the ranks of the retired engineers in this country who might be depended upon to do the job as a sort of public duty on payments only of allowances for sittings and travelling. The Committee suggest that an experiment be made in the first instance at a few places by appointing an independent arbitrator acceptable to both the parties and if the experiment works successfully, the procedure might be adopted on an extensive scale, and a panel of independent arbitrators consisting of architects, retired engineers or persons selected from the Institute of Engineers may be appointed for the purpose. |
| 74 | 138     | The Committee consider it very necessary that a review of all the arbitration cases should be made so that lessons may be drawn from them and suitable instructions drafted and steps taken to improve procedure where it is revealed to be defective.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 75 | 139     | The Committee find that there are 60 cases of arbitration remaining outstanding for a long time. Considering that all the cases are referred to departmental arbitration, they find it hard to reconcile the instances of delay in the arbitration by departmental officers with the argument that independent arbitration might result in delays. However, they recommend that energetic action should be taken to dispose of the cases outstanding for a long time.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 76 | 143     | The Committee notice that the M.E.S. Review Committee had come to the conclusion that at the moment the Officers were not doing enough inspection because they are loaded with office                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

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work. It is, therefore, seen that to a very large extent the quality of work is certified only on the basis of the supervision made by the Superintendents and Overseers. The Committee do not consider this satisfactory. They hope that immediate steps will be taken to enable the Engineers to do more of inspection and satisfy themselves about the quality of the work done.

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The Committee noticed that the contractors had a feeling that supervision by the supervisors of the Departments was excessive. Perhaps the real drawback is that due to the inadequacy of inspection by Engineers of the department, entire reliance is placed by the department on the subordinate officials, who remain on the spot. In such a situation, it is possible that the subordinate officials actually wield greater powers than it was intended to confer on them. It could possibly lead even to corruption. The Committee consider that this question has to be given careful attention. The Committee would recommend that experiments should be carried out at some places where the contractors executing the work are firms of standing and employ qualified and experienced engineers and technical staff of their own, to reduce the extent of departmental supervision by subordinate officials. If the experiment is successful it may gradually be extended. Meanwhile, suitable measures should be taken to ensure that all contractors employ competent and qualified engineering staff and take full responsibility for detailed supervision.

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The Committee are of the view that an independent technical audit could be quite as useful on the technical side as the statutory audit conducted by the Comptroller and Auditor General with regard to the accounts of the Central and State Governments the benefits of which are well recognised. They feel that the agency of the Chief Technical Examiner, if properly utilised, can be a means for eradicating many of the evils now prevalent in the Engineering activities of Government. The solution to the many problems which have been considered as militating against the continuance of this organisation should be found in reshaping its structure so as

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		to fulfil the role of an independent external technical audit. The charter of duties including the scope of technical examination, the time limit within which such examination should be completed etc., should be suitably laid down so that any defects noticed at present may be removed. The Committee would suggest that the Organisation should be so built up as to be a common technical audit agency in respect of all works service organisations under the Central and State Governments.
79	152	The Committee are convinced that an examination of the type carried out by the C.T.E could be undertaken efficiently without fear or favour only by a completely independent cadre of officers. The Committee are of the view that such an independent cadre should be built up, especially in view of their recommendation that there should be one organisation to conduct an independent technical audit of the works executed by the various organisations.
90	153	The Committee would suggest that as far as possible common specifications and designs of furniture should be adopted by all Departments of the Government including the Railways so that there may be a certain measure of uniformity in maintenance and in provision of funds for renewal besides economy.
81	154	The Committee recommend that the M.E.S. should also adopt the system as in the C.P.W.D. of assessing the percentage of renewals separately on the basis of durable and non-durable furniture since the value under each category is likely to be considerable. The Committee would also like to draw the attention of the Ministry of Works, Housing and Supply to the fact that the basis for demanding funds for the renewal of C.P.W.D. furniture is very much higher than the one adopted by the M.E.S. The matter requires examination with a view to reduce it to a reasonably low figure. The Committee would recommend the adoption of a uniform basis.
82	155	The Committee regret to note the delay in the matter of reviewing the surpluses in the war time accumulations of machinery. Such delays not

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only prevent the use of those stores for other beneficial purposes, but also lead to their deterioration and ultimate loss. The Committee would therefore, emphasize the need to complete this review early.

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The Committee desire that the question of rendering assistance to the people in the constructional and other activities which are springing up all over the country by loaning to local authorities and other popular bodies and even operating equipments like tractors, bull dozers etc., should be examined. They feel that if it were done it would yield the twin benefits of utilisation of the equipment for development work and also of providing a means for emotional integration of the Army with the people.

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The Committee have in para 105 of their Fifty-Sixth Report recommended the appointment of a Stores Inquiry Committee to examine various problems pertaining to Defence Stores. They would suggest that the Stores requirements etc., of the M.E.S. should also be brought within the scope of that enquiry.

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The Committee do not feel happy about the tendency to demand separation of what could possibly remain as a common Inter-service organisation, catering to the needs of all the armed forces. They would rather desire that as many common activities and Services in the Defence Forces as possible should be integrated and brought under Inter-Service Organisations. The Committee would recommend in this context that the inter-service character of the M.E.S. Organisation should be carefully preserved.

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164—165

In view of the considerations pointed out in paras 161 to 163, the Committee feel that there can be no insuperable objection to making the M.E.S. organisation completely civilian and constituting it as an inter-service organisation under a civilian head to work under the Ministry of Defence. In order to provide experience in construction works during peace time to some officers of the Engineer Corps, officers should be posted on deputation to the Civilian Organisation just as it was suggested by the M.E.S. Review Committee to post a few officers to the C.P.W.D. and other Works Organisations.

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The Committee learn that the U.K. Government have accepted the Report of a Committee under the chairmanship of Lord Weeks which examined a similar question and recommended a civilian works organisation. They would suggest that this Report should be studied carefully and the feasibility of converting the M.E.S. into a civilian works organisation of an Inter-Service character should be very carefully examined.

87 168—169

While the Committee are glad to note that Engineer Units and other wings of the armed forces have come to the aid of the civil population in times of emergencies, they would suggest that there should be an arrangement by which the Army would be able to participate in a regular and continuous manner in nation building activities. From this point of view, it would be advantageous if Engineer Units undertake systematically the execution of works, for which they are fitted and which otherwise are executed by civil agencies. The Committee feel that if this idea is accepted, details could be worked out and the question of costs could be considered in a more realistic manner. It may be possible for the concerned department to bear the cost of a work which it would otherwise meet if a civil agency were to do the work and for the Defence estimates to bear only the extra cost which might be considered as due to the maintenance of an extra reserve. The Committee would, therefore, suggest that this matter should be given careful consideration.

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The Committee would suggest that the Engineer Officers in the various Commands should be asked to collect during the course of their work problems requiring research and send them up to the Command. In suggesting the problems, selection should be made not only from those that cause difficulties in actual work, but also those that suggest themselves for improvement of technique. The Committee would suggest that these problems should be sorted out by the Commands and should be sent up to the E.-in-C.'s Office with suggestions. In that office a record should be kept of all the problems that have been suggested and action should be taken by entrusting research on them to various agencies

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indicating the priorities. Those that are allied to the problems already under study in other research organisations like Central Building Research Institute, Roorkee, the College of Military Engineering, Kirkee, the Central Road Research Institute, Delhi, or the National Buildings Organisation, should be entrusted to the institution concerned. Other problems similar to those on which a Unit of the M.E.S. is already engaged should be assigned to them. Problems which have a bearing on the locale where they arise should be entrusted to a formation working there. The Committee would suggest that a system of co-ordination should be maintained between the research work done at various places and the results communicated widely among all the Engineers.

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The Committee consider it desirable that a 'Guide to Efficiency' containing a digest of all important instructions and previous decisions should be prepared and periodically revised for the convenience of the officers so that they might not lose sight of important matters.

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The Committee also recommend the publication of an Engineers' handbook showing problems of an unusual nature which arise in the M.E.S. during the execution of works and the manner in which such problems are solved.

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## APPENDIX XIV

### *Analysis of Recommendations contained in the Report*

#### I. *Classification of Recommendations*

	No.
A. Recommendations for improving the Organisation and working of the Department:	
(S. Nos. 1 to 6, 10, 22 to 36, 38, 39, 43, 47 to 57, 59 to 61, 65, 67 to 70, 73 to 76, 78 to 80, 83 to 90)	59
B. Recommendations for effecting economy and efficiency:	
(S. Nos. 7 to 9, 11 to 21, 37, 40 to 42, 44 to 46, 58, 62 to 64, 66, 71, 72, 77, 81 and 82)	31
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II. <i>Important recommendations directed towards economy</i>	

Sl. No.	No. as per summary of recommendations Appendix XIII	Particulars
1	9 & 12	For reduction of establishment charges.
2	11 & 17	For systematic and scientific assessment of the staff position and for review regarding idle capacity.
3	7 & 8	For taking steps to realise outstanding rent recoveries.
4	13 & 37	For entrusting progressively more and more works for execution to different agencies which have special advantages to work economically.
5	14	For replacing engineer officers by non-technical officers for performing non-technical and administrative duties.
6	15	For reducing the number of Superintending Engineers in the Offices of the Chief Engineer by amalgamating Works, Planning and Stores Sections.
7	16	For abolishing the posts of Deputy Chief Engineers in the three Commands.

Sl. No.	No. as per summary of recommendations	Particulars
8	18	For laying down standards regarding the number of Divisions in an Area .
9	19	For pruning of establishment as a result of cuts in the size of the Plan.
10	20	For relieving the C.W.Es. and G.Es. of planning and designing duties.
11	21	For economy in the strength of the planning and designing staff due to the standardisation of type designs.
12	41	For drawing water and power requirements of the various Stations from one Source, Defence or Civil.
13	42	For submission of periodic reports by C.W.Es. on the aspects of reducing maintenance costs of buildings, roads, installations etc.
14	44	For working out ceiling costs of buildings in different areas.
15	45	For uniformity and austerity in the scales of accommodation for the civil and military officers.
16	66	For minimising cases of extensions of period in contracts.
17	72	For enforcing recoveries from contractors.
18	77	For carrying out experiments to reduce the extent of departmental supervision.
19	81	For assessing the percentage of renewals of furniture separately on the basis of durable and non-durable items.
20	82	For early review of the surpluses in the war time accumulations of machinery.